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Assurance Report

2011–12 Major Projects Report

Defence Materiel Organisation

Australian National Audit Office

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Australian National
Audit Office

Canberra ACT
19 December 2012

Dear Mr President
Dear Madam Speaker

The Australian National Audit Office has undertaken a review of the status of selected Defence equipment acquisition projects as at 30 June 2012, as presented by the Defence Materiel Organisation, in accordance with the authority contained in the *Auditor-General Act 1997*. Pursuant to Senate Standing Order 166 relating to the presentation of documents when the Senate is not sitting, I present the report of this review to the Parliament. The report is titled *2011–12 Major Projects Report*.

Following its presentation and receipt, the report will be placed on the Australian National Audit Office's Homepage—http://www.anao.gov.au.

Yours sincerely

Ian McPhee
Auditor-General

The Honourable the President of the Senate
The Honourable the Speaker of the House of Representatives
Parliament House
Canberra ACT

AUDITING FOR AUSTRALIA

The Auditor-General is head of the Australian National Audit Office (ANAO). The ANAO assists the Auditor-General to carry out his duties under the *Auditor-General Act 1997* to undertake performance audits, financial statement audits and assurance reviews of Commonwealth public sector bodies and to provide independent reports and advice for the Parliament, the Australian Government and the community. The aim is to improve Commonwealth public sector administration and accountability.

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Abbreviations

AMOTS	Australianised Military-Off-The-Shelf
ANAO	Australian National Audit Office
AOR	Acquisition Overview Report
APR	Acquisition Performance Report
ARH	Armed Reconnaissance Helicopter
ASAE	Australian Standard on Assurance Engagements
ASMD	Anti-Ship Missile Defence
AWD	Air Warfare Destroyer
C-17	Boeing C-17 Globemaster III aircraft
COTS	Commercial-Off-The-Shelf
DMO	Defence Materiel Organisation
EI&W	Early Indicators and Warnings
ERMF	Enterprise Risk Management Framework
EVMS	Earned Value Management System
FFG	Fast Frigate Guided (Guided Missile Frigate)
FIC	Fundamental Inputs to Capability
FMR	Final Materiel Release
FMS	Foreign Military Sales
FOC	Final Operational Capability
HF	High Frequency

Hw	Heavyweight
IMR	Initial Materiel Release
IOC	Initial Operational Capability
JCPAA	Joint Committee of Public Accounts and Audit
JPD	Joint Project Directive
LHD	Landing Helicopter Dock
MAA	Materiel Acquisition Agreement
Major Projects	Major Defence equipment acquisition projects
MOTS	Military-Off-The-Shelf
MOU	Memorandum Of Understanding
MPR	Major Projects Report
MRH90	Multi-Role Helicopter
MRM	Materiel Release Milestone
PDSS	Project Data Summary Sheet
RCS	Replacement Combat System
R&S	Reliability and Sustainability
SADI	Skilling Australia's Defence Industry
SATCOM	Satellite Communication
SMEWA	Specialist Military Equipment Weighted Average

Part 1: ANAO Overview

Auditor-General's Foreword

This fifth Major Projects Report (MPR) continues the review by the Australian National Audit Office (ANAO) of selected major Defence equipment acquisition projects (Major Projects). It builds on the earlier work by the Defence Materiel Organisation (DMO) and the ANAO to improve the transparency of, and accountability for, the status of Major Projects for the benefit of the Parliament, the Government and other stakeholders.

Acquiring and sustaining capability for the Australian Defence Force is critically important work and this report provides an update on 29 of the most significant projects being managed by the DMO. The extent of reporting on Major Projects by the DMO reflects positively on the organisation and the Ministers for Defence and Defence Materiel in their pursuit of better acquisition outcomes.

The ongoing support of the Joint Committee of Public Accounts and Audit (JCPAA) has also been very important to the development of the MPR, with the JCPAA recently identifying this review as a 'Priority Assurance Review', under the *Auditor-General Act 1997*. Each year the JCPAA also reviews and endorses the Guidelines for the preparation of this report.

Additionally, in 2011–12, the JCPAA recommended that the DMO include a discussion on the use by, and value of, the MPR to external stakeholders. The DMO undertook a survey to collect these views and it is pleasing that the survey respondents generally considered that the MPR enhanced the accountability of public spending by the DMO on Major Projects.

The management of Major Projects is complex and, for this reason, it is a major challenge for the DMO to deliver the required capability on schedule and within budget. Consistent with previous years, schedule slippage remains a key focus for the DMO, particularly for projects regarded as developmental. Given the ongoing interest in the timely delivery of Major Projects, the ANAO will continue to monitor delivery in terms of cost, schedule and capability.

As previously, this year's review continued the strong working relationship between the ANAO and the DMO. Defence and industry stakeholders also provided valuable input to assist with the review.

Ian McPhee
6 December 2012

Summary

Introduction

1. Major Defence equipment acquisition projects (Major Projects) are the subject of considerable parliamentary and public interest, in view of their high cost, planned contribution to national security and the challenges involved in completing them within budget, on time and to the required level of capability.

2. The Defence Materiel Organisation (DMO) contributes to the development and sustainment of capability for the Australian Defence Force (ADF) and expended some $4.5 billion on major and minor capital acquisition projects in 2011–12.[1]

3. Although the Government has foreshadowed a new Defence White Paper in 2013, it is expected that over the next 15 years, the Government will replace or upgrade up to 85 per cent of the ADF's equipment. This will include the purchase of equipment in all of the major elements of ADF capability, including Land, Air, Sea and Joint capabilities, and is a significant investment for the Commonwealth, of up to $150 billion over the next decade.[2]

4. The procurements by the DMO do not generate new capability for the Defence Organisation until they have been successfully introduced into service with the ADF. The overarching responsibility for the introduction into service of Defence equipment, for example, provision of personnel, training and command, normally resides within other areas of the Department of Defence.[3] Thus, while the DMO's role is only part of the introduction into service of new capability, it is a significant one.

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1 Department of Defence, *Defence Annual Report 2011–2012*, DMO Financial Statements, Appendix 11, p. 471.

2 Minister for Defence Materiel, the Hon. Jason Clare MP, *Defence Skills Plan to Meet the Challenges Ahead*, 5 September 2011.

3 Source 1: Department of Defence, *Defence Capability Development Handbook 2011*, pp. 3–4.

Source 2: Defence Instructions (General) OPS 45–2, *Capability Acceptance into Operational Service*, 9 November 2012, paragraph 1, p.1.

2011–12 Major Projects Report projects

5. This fifth report covers 29 of the DMO's Major Projects. The projects and their approved budgets are depicted in Table 1, below. This represents something of a milestone for the Major Projects Report (MPR), in that the original intent was to report on up to 30 projects, from nine in the first MPR in 2007–08, 'to encourage transparency and accountability by providing a basis for longitudinal analysis of project performance'.[4] It is anticipated that 29 projects will also be reported in the 2012–13 MPR.[5]

6. The total approved budget for the Major Projects included in the 2011–12 MPR is approximately $47.3 billion, as at 30 June 2012. The MPR therefore covers nearly 60 per cent of the budget within the Approved Major Capital Investment Program of $80.3 billion.[6]

7. The ANAO's review of Major Projects in the MPR is in addition to the regular program of performance and financial statement audits conducted within the Defence portfolio.

[4] Joint Committee of Public Accounts and Audit, Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*, May 2012, paragraph 3.80, pp. 29–30.

[5] The Joint Committee of Public Accounts and Audit endorsed the DMO 2012–13 MPR Guidelines via correspondence to the Auditor-General, on 19 September 2012. The 2012–13 MPR is anticipated to reflect the exit of the C-17 Heavy Airlift project (AIR 8000 Ph 3) and the introduction of the Battlespace Communications System (LAND) project (JP 2072 Ph 2A).

[6] Based on information contained in the Approved Major Capital Investment Program (AMCIP) provided to the ANAO by the DMO.

Table 1

2011–12 MPR projects and approved budgets at 30 June 2012

Project	DMO Abbreviation	Approved Budget $m
Air Warfare Destroyer Build (SEA 4000 Ph 3)	AWD Ships	7 853.1
Airborne Early Warning and Control Aircraft (AIR 5077 Ph 3)	Wedgetail	3 829.5
Multi-Role Helicopter (AIR 9000 Ph 2/4/6)	MRH90 Helicopters	3 628.4
Bridging Air Combat Capability (AIR 5349 Ph 1/2)	Super Hornet	3 538.5
Field Vehicles and Trailers (LAND 121 Ph 3)	Overlander Vehicles	3 171.2
Amphibious Ships (LHD) (JP 2048 Ph 4A/4B)	LHD Ships	3 052.1
Future Naval Aviation Combat System (AIR 9000 Ph 8)[1]	MH-60R Seahawk	2 910.2
New Air Combat Capability (AIR 6000 Ph 2A/2B)	Joint Strike Fighter	2 334.0
Armed Reconnaissance Helicopter (AIR 87 Ph 2)	ARH Tiger Helicopters	2 028.9
F/A-18 Hornet Upgrade (AIR 5376 Ph 2)	Hornet Upgrade	1 875.5
C-17 Globemaster III Heavy Airlifter (AIR 8000 Ph 3)	C-17 Heavy Airlift	1 844.4
Air to Air Refuelling Capability (AIR 5402)	Air to Air Refuel	1 795.7
Guided Missile Frigate Upgrade Implementation (SEA 1390 Ph 2.1)	FFG Upgrade	1 449.6
Bushmaster Protected Mobility Vehicle (LAND 116 Ph 3)	Bushmaster Vehicles	1 032.1
Next Generation SATCOM Capability (JP 2008 Ph 4)	Next Gen Satellite	861.1
ANZAC Anti-Ship Missile Defence (SEA 1448 Ph 2B)	ANZAC ASMD 2B	675.8
High Frequency Modernisation (JP 2043 Ph 3A)	HF Modernisation	580.1
Additional Medium Lift Helicopters (AIR 9000 Ph 5C)	Additional Chinook	550.9
Armidale Class Patrol Boat (SEA 1444 Ph 1)	Armidales	537.2
Collins Replacement Combat System (SEA 1439 Ph 4A)	Collins RCS	449.9
Indian Ocean Region UHF SATCOM (JP 2008 Ph 5A)	UHF SATCOM	432.5
Replacement Heavyweight Torpedo (SEA 1429 Ph 2)	Hw Torpedo	425.1
Collins Class Submarine Reliability and Sustainability (SEA 1439 Ph 3)	Collins R&S	411.4
SM-1 Missile Replacement (SEA 1390 Ph 4B)	SM-2 Missile	398.8
ANZAC Anti-Ship Missile Defence (SEA 1448 Ph 2A)	ANZAC ASMD 2A	386.0
Follow On Stand Off Weapon (AIR 5418 Ph 1)	Stand Off Weapon	340.8
Artillery Replacement (LAND 17 Ph 1A)	155mm Howitzer	320.6
Battlefield Command Support System (LAND 75 Ph 3.4)	Battle Comm. Sys.	305.8
Counter – Rocket, Artillery and Mortar (LAND 19 Ph 7A)[1]	C-RAM	251.4
Total		**47 270.6**

Source: 2011–12 MPR, Part 3, Project Data Summary Sheets.

Note 1: Indicates the project is included in the MPR program for the first time in the 2011–12 Report.

Role of the Joint Committee of Public Accounts and Audit

8. The Joint Committee of Public Accounts and Audit (JCPAA) was influential in establishing the MPR, and has taken an active role in the development of the MPR program. Each year, the Committee considers the draft DMO MPR Guidelines (the Guidelines) and provides direction on their development. Once the Committee endorses the Guidelines[7], the document provides the foundation for the ANAO's review of the Project Data Summary Sheets (PDSSs) prepared by the DMO.[8]

9. In May 2012 the Committee published its third report on its review of the annual MPR.[9] Given that project schedule slippage remains a major challenge, the JCPAA recommended that the DMO include a section specifically providing information on the activities being undertaken to minimise schedule slippage and the results of those activities. This section has been included at page 139 in Part 2 of this report.

10. The JCPAA also recommended that the DMO include a discussion on the use by, and value of, the MPR by external stakeholders in the 2011–12 MPR. A summary of the findings are detailed at page 121 in Part 2 of this report.

Report objective and review scope

11. The objective of this report is to provide:

- comprehensive information on the status of selected Major Projects, as reflected in the PDSSs prepared by the DMO, and the Statement by the Chief Executive Officer (CEO) of the DMO (contained in Part 3 of this report);
- the Auditor-General's formal review conclusion on the ANAO's review of the preparation of the PDSSs by the DMO in accordance with the endorsed Guidelines (contained in Part 3 of this report);

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7 Australian National Audit Office, *2011–12 Major Projects Report*, Appendix 1, p. 559.

8 The Guidelines for the 2011–12 MPR, endorsed by the JCPAA in May 2012, set out the requirements for the DMO project offices to provide complete and accurate Project Data Summary Sheets and supporting information for the ANAO review.

9 Joint Committee of Public Accounts and Audit, Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*, May 2012.

- ANAO analysis on the three key elements of the PDSSs—cost, schedule and capability, in particular, longitudinal analysis across these key elements of projects over time (contained in Part 1 of this report); and
- further insights and context by the DMO on issues highlighted during the year (contained in Part 2 of this report—although not included within the scope of the review by the ANAO).

12. In February 2012, the JCPAA identified this review as a 'Priority Assurance Review', under section 19A(5) of the *Auditor-General Act 1997* (the A-G Act), allowing the ANAO full access to the information gathering powers under the A-G Act, rather than necessitating the agreement of an agency, in this case the DMO, for a review.

13. As in previous years, the review is conducted in accordance with the Australian Standard on Assurance Engagements (ASAE) 3000 *Assurance Engagements Other than Audits or Reviews of Historical Financial Information*, issued by the Australian Auditing and Assurance Standards Board.

14. Excluded from the scope of the ANAO's review is PDSS data on the achievement of future dates or events (including forecasts on delivering key capabilities), the project financial assurance statements, and major risks and issues. By its nature, this information relates to future events and depends on circumstances that have not yet occurred or may not occur, or have occurred but have not yet been identified. Accordingly, the conclusion of this review does not provide any assurance in relation to this information.[10]

15. While our work is appropriate for the purpose of providing an independent review report in accordance with ASAE 3000, our review is not as extensive as individual project performance audits conducted by the ANAO, in terms of the nature and scope of project issues covered, and the extent to which evidence is required by the ANAO. Consequently, the level of assurance provided by this review in relation to the 29 Major Projects is less than that provided by our performance audits. However, key themes from ANAO performance audits on major Defence acquisitions or their governance, are provided or referenced, to provide additional context and insights into the Major Projects.

[10] Further information on the scope of the review is set out in paragraphs 1.13 to 1.14.

Overall conclusion

16. This fifth MPR consolidates the review of Major Projects initially introduced in the 2007–08 MPR and has continued to introduce new projects up to the originally agreed level of 30 projects for review. The MPR maintains the transparency and accountability for performance relating to cost, schedule and progress towards delivering the key capabilities of Major Projects, and provides opportunities for longitudinal analysis into the future.

17. To assist in conducting inter-report analysis, the presentation of data remains largely consistent and comparable with the 2010–11 MPR.

Review conclusion

18. Following identification of this review as a 'Priority Assurance Review' under section 19A(5) of the A-G Act by the JCPAA, the ANAO has reviewed the PDSS data as contained in this volume and presents the Auditor-General's formal review conclusion.

19. The conclusion of the review of the PDSSs was that nothing has come to the attention of the ANAO that causes us to believe that the information in the PDSSs, within the scope of our review, has not been prepared, in all material respects, in accordance with the 2011–12 MPR Guidelines.

20. The qualification of the review conclusion that was required in 2010–11 has been avoided in 2011–12 largely due to a revised presentation of the project financial information to an out-turned format (refer to paragraphs 24 and 25).

Projects' performance

21. The data reviewed in the PDSSs covers the three major dimensions of project performance: cost, schedule, and progress towards delivering the planned capability.

Overview

22. Within the review period, all projects continued to operate within their approved budget. Two projects, ANZAC ASMD 2B (government approval of ships 2-8) and Bushmaster Vehicles (additional quantities/upgrades) were provided budget supplementation for real cost/scope increases.[11]

[11] Australian National Audit Office, *2011–12 Major Projects Report*, Part 3, Project Data Summary Sheets.

23. Provision of supplementation/reduction of project budgets for foreign exchange movements (FOREX) via the whole-of-government 'no win/no loss' policy[12] remains as in previous years. In 2011–12, this reflected a reduction in project budgets of $894.6 million (refer to Table 4, at page 61).

24. Additionally, as noted in the 2010–11 MPR, projects receiving 'Second Pass Approval'[13] post 30 June 2010 now receive indexation for the forecast life of the project at approval.[14] This approach is referred to as 'out-turning'.

25. Implementation of policy changes from 1 July 2010 required project budgets to be presented to government for Second Pass Approval in an 'out-turned' format, in an endeavour to present the full cost of project completion to Final Operational Capability (FOC) prior to receiving final approval for project commencement.[15]

26. Under this model of price indexation, projects will only be considered for further indexation for fluctuations in the agreed index, where contingency funding has been exhausted or cannot be sourced internally by the DMO. Once the forecast FOC has passed, projects will be expected to manage price increases beyond the agreed index within their existing budget. This will require close management by the DMO to avoid project budget deficits, particularly in an environment where project slippage is not uncommon.

27. For the first time, the 2011–12 MPR includes a project financial assurance statement within each PDSS, specific to the project. The project financial assurance statement is intended to provide readers with a clear articulation on a project's financial position and to provide transparency in

[12] *Defence Portfolio Budget Statements 2011–12*, p. 31.

[13] Second Pass Approval: The final milestone in the project requirements phase, at which point the Government endorses a specific capability solution and approves funding for the project acquisition phase. Australian National Audit Office, *2011–12 Major Projects Report*, Appendix 7, p. 594. The project cannot proceed to the acquisition phase until this approval is obtained.

[14] Pre July 1 2010 projects have had indexation to the expected end date for the project provided as of 1 July 2010.

[15] FOC is the point in time at which the final subset of a capability system, that can be operationally employed, is realised. FOC is a capability state endorsed by government at Second Pass Approval and reported as having been reached by Defence's capability manager (usually the Service Chief). Major capital equipment can be placed in Defence service use before formally achieving FOC, such as in the case of Bushmaster Vehicles and Armidales.

regard to 'whether there is sufficient budget remaining to deliver the materiel element of capability...'[16]

28. Finally, the 2012–13 Budget resulted in Defence making a 'contribution to the Government's fiscal strategy of $5.4 billion across the Forward Estimates and will see Defence contribute $971 million in 2012–13'.[17] Future MPR analysis will continue the assessment of the DMO's management of project funding considerations.

29. Maintaining Major Projects on schedule, the second major dimension of project performance, remains the most significant challenge for the DMO and its industry contractors; in turn affecting when the capability is made available for operational release and deployment by the ADF. Similar to the analysis in the 2010–11 MPR, the DMO data indicates that, as at 30 June 2012, the total time for the 29 Major Projects to achieve their FOC is anticipated to be one-third longer than was originally planned, the last 12 months adding 99 months of total slippage to the projects in the 2011–12 MPR (see Table 2, at page 22).

30. As noted previously, the JCPAA recommended the DMO include a section specifically providing information on the activities being undertaken to minimise schedule slippage and the results of those activities. This section has been included at page 139 in Part 2 of this report.

31. The third major dimension of project performance which this report examines is progress towards the delivery of capability. Consistent with previous years, the DMO expects to deliver almost all capabilities associated with the Major Projects in this report.

32. While the assessment of predicted capability delivery by the DMO is outside the scope of the Auditor-General's formal review conclusion, ANAO analysis indicates that the assessment of capability to be delivered is in some cases overly optimistic, with a reduction in the DMO's confidence for the expected delivery of capability since the 2010–11 MPR (see Table 2, at page 22). Additionally, and as for 2010–11, the MRH90 Helicopters, ARH Tiger Helicopters and Air to Air Refuel projects have continued to experience issues

[16] Joint Committee of Public Accounts and Audit, Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*, May 2012, Appendix E, p. 67.

[17] Minister for Defence, the Hon. Stephen Smith MP, *Address to the Air Power Conference*, 10 May 2012.

in 2011–12.[18] This year, as reported by the DMO, eight projects are 'under threat' or are 'unlikely' to meet all their required measures of materiel capability. The projects are: Wedgetail, MRH90 Helicopters, ARH Tiger Helicopters, Air to Air Refuel, FFG Upgrade, Collins R&S, Stand Off Weapon and 155mm Howitzer. Further details are outlined at paragraph 2.79.

33. Table 2, below, provides summary data on the DMO approved budgeted cost, schedule performance and progress toward delivering capabilities for the Major Projects covered in this report, and compares performance against that reported in previous MPR editions.

[18] Australian National Audit Office, *2011–12 Major Projects Report*, Part 3, Project Data Summary Sheets.

Table 2

Summary longitudinal analysis

	2007–08 MPR	2008–09 MPR	2009–10 MPR	2010–11 MPR	2011–12 MPR
Number of Projects	9	15	22	28	29
Total Approved Budgeted Cost	$13.5 billion	$37.8 billion	$40.8 billion	$46.1 billion	$47.3 billion
Approved Budget Increase/Decrease (In-year)[1]	$1.1 billion (8.5 per cent)	$4.8 billion (14.5 per cent)	-$3.3 billion (-7.5 per cent)	-$0.1 billion (-0.3 per cent)	-$1.1 billion (-2.4 per cent)
Schedule Slippage Increase/Decrease (Total)[1]	308 months (37 per cent)	378 months (28 per cent)	688 months (31 per cent)	760 months (31 per cent)	859 months (32 per cent)
Average Schedule Slippage per Project[1]	39 months	25 months	34 months	30 months	32 months
Schedule Slippage (In-year)	-	119 months (7 per cent)	39 months (2 per cent)[2]	72 months (3 per cent)[3]	99 months (4 per cent)[4]
Expected Capability Delivery[5] • High level of confidence that will be delivered (Green)	80 per cent	86 per cent	89 per cent	94 per cent	91 per cent
• Under threat, considered manageable (Amber)	13 per cent	13 per cent	10 per cent	5 per cent	8 per cent
• Unlikely to be met (Red)	7 per cent	1 per cent	1 per cent	1 per cent	1 per cent

Sources: 2007–08, 2008–09, 2009–10, 2010–11 and 2011–12 MPRs, Parts 2 and 3.

Note 1: As the data for the 29 Major Projects in the 2011–12 MPR compares results with subsets of projects in the 2010–11 MPR (27 of the current 29 Major Projects), 2009–10 MPR (21 of the current 29 Major Projects), the 2008–09 MPR (14 of the current 29 Major Projects) and the 2007–08 MPR (nine of the current 29 Major Projects), a comparison of the data across years should be interpreted in this context. In 2011–12, Hornet Refurb was removed from the PDSSs and therefore it is not included in the 2011–12 analysis.

Note 2: Based on the 15 projects from the 2008–09 MPR.

Note 3: Based on the 22 projects from the 2009–10 MPR.

Note 4: Based on 27 projects from the 2010–11 MPR.

Note 5: The grey section of the table covers data excluded from the scope of the ANAO's assurance review.

Cost

34. The total budgeted costs for Major Projects included in this MPR have increased by $5.9 billion (14 per cent) since Second Pass Approval. The $5.9 billion is comprised of price (materials and labour) variation increases of $7.5 billion, real variation (such as scope changes and budget transfers between projects) increases of $2.7 billion, and foreign exchange rate movement decreases of $4.3 billion.

35. Only two projects have had a real budgeted cost increase since Second Pass Approval of greater than $500 million, namely the MRH90 Helicopters and Bushmaster Vehicles, both for scope increases.[19]

36. In terms of forecast and actual expenditure, the total expenditure for the 29 projects as at 30 June 2012 was $3.3 billion, against an initial forecast expenditure of $4.0 billion and half-year revised forecast of $3.2 billion. The main factors contributing to the variance were production/schedule delays, lower than anticipated FMS disbursements and foreign exchange fluctuations.

37. In 2011–12, the Major Projects' budgets were reduced by approximately $1.1 billion dollars. Of the 29 projects in this MPR, five have experienced real cost reductions and two experienced real cost/scope increases with a total net reduction of $267.3 million. FOREX impacts provided further net reductions of $894.6 million (refer to Table 4, at page 61).

38. In previous MPRs, the Guidelines required some projects to report expenditure in base date dollars. In 2011–12, the JCPAA accepted, following advice from the DMO[20], that it was unduly onerous for the DMO to provide this to the extent previously required. For the 2011–12 MPR, the requirement to present base date dollars was removed.

39. To mitigate any perceived reduction in the level of information provided, the DMO proposed to the JCPAA that projects include a project financial assurance statement in the PDSS.[21] This would provide an overall

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[19] Australian National Audit Office, *2011–12 Major Projects Report*, Part 3, Project Data Summary Sheets. The MRH90 Helicopters scope increase was due to the inclusion of an additional 34 helicopters to replace Black Hawk (Phase 4) and Sea King (Phase 6), and Bushmaster Vehicles was for additional vehicles and upgrades.

[20] Joint Committee of Public Accounts and Audit, Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*, May 2012, paragraphs 3.7 to 3.25, pp. 14–19.

[21] Source 1: ibid., paragraphs 3.15 to 3.25, pp. 16–19.

Footnote continued on the next page…

assessment of the project's budgetary position, stating whether there is sufficient budget remaining to complete the project as approved by government. This is discussed further from paragraph 1.27, in the context of the DMO's financial control framework.

Schedule

40. In the 2011–12 MPR, the total schedule slippage for the 29 Major Projects as at 30 June 2012 is 859 months (2010–11: 760 months) when compared to the initial schedule first approved by government. This represents a 32 per cent (2010–11: 31 per cent) increase on the approved schedule.

41. ARH Tiger Helicopters represents over a third of the in-year slippage (37 months in 2011–12) and now includes a linkage to the LHD Ships platform as foreshadowed in the Statement by the CEO DMO of 2010–11[22], and follows further schedule issues experienced by industry.

42. Across the 29 Major Projects included in this report, 18 projects (2010–11: 14 projects) have experienced schedule slippage, confirming that managing Major Projects to successful delivery, within the approved timeframe, is a widespread challenge.

43. The projects which have experienced the most significant delays are: High Frequency (HF) Modernisation (134 months); Collins R&S (99 months); FFG Upgrade (96 months); ARH Tiger Helicopters (79 Months); Collins RCS (72 months); ANZAC ASMD Phase 2A (72 months); Wedgetail (58 months) and ANZAC ASMD Phase 2B (57 months).

44. In the 12 months that have passed since the last MPR, 99 months of slippage has been added to the schedule of the projects in the report. This slippage is made up of: ARH Tiger Helicopters (37 months); Overlander Vehicles (12 months); FFG Upgrade (12 months); Wedgetail (10 months); Armidales (nine months); Battle Comm. Sys. (eight months); Hornet Upgrade (five months); SM-2 Missile (four months) and C-RAM (two months).

45. In contrast, the expected FOC date for the ANZAC ASMD 2B project decreased by two months; the HF Modernisation project decreased by

Source 2: ibid., Appendix E, p. 67.

[22] Australian National Audit Office, *2010–11 Major Projects Report*, Part 3, p. 181.

11 months; and the ANZAC ASMD 2A project decreased by two months. (Refer to paragraph 2.52).

46. Disaggregation according to a project's Second Pass Approval shows that 87 per cent (2010–11: 88 per cent) of the total schedule slippage across the Major Projects covered in the 2011–12 MPR is made up of projects approved prior to the DMO's demerger from the Department of Defence, in July 2005. This is a positive indicator of the benefits that the DMO, as a specialist acquisition and sustainment organisation, is able to bring to complex Defence procurement.

47. Additional ANAO analysis (refer to Figure 10, at page 70) presents project slippage as reported in each of the five MPRs against the DMO classification of projects as Military-Off-The-Shelf (MOTS), Australianised Military-Off-The-Shelf (AMOTS) or Developmental.[23] These classifications are a general indicator of the difficulty associated with the procurement process and this figure highlights, prima facie, that the more developmental in nature a project is, the more likely it will experience project slippage.

48. Following the Kinnaird and Mortimer Reviews, increasingly government has required the Defence Organisation to pursue MOTS/Commercial-Off-The-Shelf (COTS) capability solutions, where such solutions exist that can deliver the required capability.[24] The intention of this policy is to reduce the risk associated with the acquisition of new capability by limiting the Defence Organisation's exposure to the additional risk associated with Developmental projects.

49. The reasons for schedule slippage vary but primarily reflect the underestimation of both the scope and complexity of work, particularly for AMOTS and Developmental projects.

50. Additionally, the JCPAA 'believes that the transparency of initial classification decisions could still be improved' and specifically requested 'to see that MOTS and COTS options have been explicitly considered and eliminated for particular reasons before final procurement decisions have been

[23] Australian National Audit Office, *2011–12 Major Projects Report*, Part 2, p. 119.

[24] Mortimer, David, *Going to the Next Level: the report of the Defence Procurement and Sustainment Review, [September] 2008*, p. 39.

made'.[25] The Committee wishes to see this information included in the MPR for all new projects.[26]

51. As reflected in the 2010–11 MPR, incorrect classification and data provided to government prior to approval, including project maturity scores[27], may also have a significant impact on future project slippage.

52. The Defence Capability Plan (DCP) 2012, which was endorsed by the Minister for Defence, illustrates the project maturity score benchmarks at First and Second Pass Approval. Second Pass Approval for MOTS and Developmental projects are 44 and 35, respectively.[28] The maturity scores at Second Pass Approval for the projects in the 2011–12 MPR vary and are generally inconsistent with the presentation in the DCP. For example Additional Chinook, which is a MOTS project, has a Second Pass Approval maturity score of 35, and Joint Strike Fighter, which is a Developmental project, has a Second Pass Approval maturity score of 40.

Progress towards delivering key capabilities

53. The last major dimension to the DMO's project management discussed in this report, in addition to cost and schedule, is capability. Capability, in the MPR context, refers to the DMO's assessment of their progress towards delivering the key capabilities, required by government and specified by the ADF.

54. The MPR provides unclassified data on the DMO's level of confidence in achieving each project's key capability attributes (Measures of Materiel Capability Performance). These measures predominantly focus on the future achievement of certain technical, functional and safety requirements associated with the platform or system as managed by and/or contracted by the DMO.

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[25] Joint Committee of Public Accounts and Audit, Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*, May 2012, paragraph 3.61, p. 25.

[26] The DMO have indicated that this new requirement is to be incorporated from the 2012–13 MPR onwards and will be disclosed by new projects in the Project Data Summary Sheets.

[27] As envisaged in the Defence Capability Plan, project maturity scores are generated to assist government in comparing the maturity of (acquisition) options as a measure of the relative confidence associated with them at the time they are being considered. Department of Defence, *Defence Capability Plan 2012*, p. 4. As noted in the 2010–11 MPR, the process of providing project maturity scores is often overly optimistic.

[28] Department of Defence, *Defence Capability Plan 2012*, p. 4.

55. As the data presented relies upon the DMO's ability to accurately forecast its future achievements, the measure has been excluded from the scope of the Auditor-General's formal review conclusion. However, analysis of the data provided is completed to provide an overall perspective on the three major components: cost, schedule and progress towards delivering capability.

56. As reflected in the portfolio of projects in the 2011–12 MPR, the DMO's assessment is marginally lower than in the 2010–11 MPR, that it has a 'high level of confidence' in delivering 91 per cent (2010–11: 94 per cent) of the key capabilities associated with the Major Projects in this report. While the delivery of eight per cent (2010–11: five per cent) of the key capabilities is considered to be 'under threat', the risk is still considered by the DMO to be manageable.[29] The remaining one per cent, in both 2010–11 and 2011–12, is assessed by the DMO as unachievable.

57. The DMO's key capability data shows that the two projects assessed by the DMO as 'unlikely' to meet some elements (one per cent) of capability are: Wedgetail, where the performance of the phased array radar will not meet the contracted specification at final delivery; and MRH90 Helicopters, where the delivery of conforming supplies is highly unlikely to be achieved for the first maritime and land operational capabilities (refer to paragraph 2.7).

Governance and business processes

58. The ANAO's understanding of the DMO's project control environment contributes to the design of our review program for the MPR, and developing an understanding of the DMO's governance and business processes is important in gaining a broader appreciation of the DMO's project management capabilities.

59. As part of the MPR review process, the ANAO includes an examination of relevant components of the DMO's financial control framework, enterprise risk management arrangements and formal assurance mechanisms.

60. Consistent with last year, other relevant governance and business process areas covered in the ANAO's review included:

[29] Note that caution needs to be exercised with year-to-year comparisons of Measures of Materiel Capability Performance. Changes in anticipated capability outcomes should be read in consideration of the information in the projects' PDSS.

- the Gate Review process[30], which is designed to provide the CEO DMO with assurance that all identified risks for a project are manageable, and that costs and schedule are likely to be under control prior to a project passing various stages of its life cycle;
- the Ministers' Projects of Concern process, which is designed to address project issues of concern to the DMO and government relating to cost, schedule and capability[31];
- the DMO's business systems[32] rationalisation, which is aimed at consolidating processes and systems in order to provide a more manageable system environment;
- the application of Earned Value Management Systems (EVMS) data in the interest of improving the accountability and transparency of the management of Major Projects as highlighted by the JCPAA[33]; and
- the project skills professionalisation and development program in the DMO and industry, which is directed at enhancing the skill sets available to manage the DMO's Major Projects.

61. In 2010–11, the ANAO identified that, for some projects, there were issues with the accuracy and completeness of information in the DMO systems for reporting on project status. This was highlighted in the case of reporting on Measures of Materiel Capability Performance, where indicators in the DMO's Monthly Reporting System did not always correspond with those presented in Acquisition Overview Reports (AORs) provided to the relevant ministers.[34]

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30 ANAO Audit Report No.52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, found that, while generally, the DMO has improved the effectiveness of the program, there remain opportunities for further improvement and rigour.

31 The Minister for Defence and the Minister for Defence Materiel maintain a process by which an increased focus on projects and industry is implemented in order to address project issues seen as significant by the CEO DMO and the Government.

32 Source 1: Joint Committee of Public Accounts and Audit, Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*, May 2012, paragraph 3.36, pp. 20–21.

Source 2: ANAO Audit Report No.19 2011–12, *Oversight and Management of Defence's Information and Communication Technology*.

33 Joint Committee of Public Accounts and Audit, Report 422, *Review of the 2009–10 Defence Materiel Organisation Major Projects Report*, April 2011, paragraph 3.74, p. 36.

34 Source 1: The need for the enhancement of the DMO's project reporting and monitoring mechanisms has been highlighted in previous ANAO reports (see for example, ANAO Audit Report No.37 2009–10, *Lightweight Torpedo Replacement Project*, p. 20).

Footnote continued on the next page…

During 2011–12, the DMO indicated that this had been addressed by the implementation of Acquisition Performance Reports (APRs).[35]

62. There are a range of enterprise and project-level acquisition governance initiatives underway, although some, such as the inclusion of project level Gate Reviews in the DMO's risk control framework, are still in their formative stages.

63. Consistent with previous years, the ANAO's assessment of these governance initiatives and the outcomes they have been able to achieve, from the results made available, are outlined in Chapter 3.

64. In 2011–12, the DMO has included an additional element in the PDSSs that reflects the DMO's consideration of whether there is sufficient money in the project budget to meet government project delivery requirements. Project managers are required to form a judgement of their capacity, to deliver the project, within their remaining project budget allocation.

65. The project level financial assurance is subsequently reviewed by the Chief Finance Officer of the DMO, who provides his own portfolio level assessment of project financial performance. Additional quality assurance is provided by third party review. In 2011–12, external reviews included the AWD Ships, Overlander Vehicles, LHD Ships, ANZAC ASMD 2B and Additional Chinook projects.

66. 2009–10 saw the introduction of a requirement for Joint Project Directives (JPDs) for all projects approved by government post 1 March 2010.[36] JPDs are designed to provide a single authoritative source of project detail approved by government and are expected to become the key reference point for Defence for all projects into the future.[37] The JPD for each project is also

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Source 2: The DMO advised that its monthly project reporting template had changed to be more key metric focused and less narrative.

[35] In November 2011, the Minister for Defence agreed to the DMO's request to replace AORs with APRs (which are an abbreviated form of the AORs).

[36] Source 1: Joint Project Directive: A project-specific directive issued by the Chief of the Defence Force and Secretary of Defence to the nominated Capability Manager, assigning overall responsibility, authority and accountability for realisation of the capability system to an in-service state. Department of Defence, *Defence Capability Development Handbook 2011*, p. 113.

Source 2: Department of Defence, Information DEFGRAM 50/2010, 4 February 2010.

[37] The importance of JPDs is emphasised by the CEO DMO in his testimony to the Senate Foreign Affairs, Defence and Trade References Committee, 7 October 2011.

intended to become the base document from which all Materiel Acquisition Agreements (MAAs)[38] will be designed to meet the materiel requirements specified in the JPD.

[38] Materiel Acquisition Agreement: An agreement between Defence and the DMO which states in concise terms what services and products the DMO (as a supplier) will deliver, for how much and when. Australian National Audit Office, *2011–12 Major Projects Report*, Appendix 7, p. 591.

1. 2011–12 MPR Review

Introduction

1.1 This chapter provides an overview of the 2011–12 report structure, the approach adopted by the ANAO in the review of the Project Data Summary Sheets (PDSSs) and the outcomes of the review.

1.2 Additionally, administrative issues raised in previous reviews are reassessed, in order to consider the Defence Materiel Organisation's (DMO's) progress in addressing them during 2011–12. Previous reviews have highlighted a number of issues which impact on the DMO's administration of major Defence equipment acquisition projects (Major Projects). Issues considered further in this chapter include:

- the financial control framework, particularly in an out-turned budget environment;
- the inherent uncertainty of prospective information (particularly in relation to developmental aspects of projects and schedule achievement);
- the maturity of the Enterprise Risk Management Framework (ERMF); and
- the application of project maturity scores.

1.3 This chapter also makes reference to other areas of focus raised by the parliamentary Joint Committee of Public Accounts and Audit (JCPAA) for consideration in the development of this and future Major Project Reports (MPRs).

1.4 As a result, the 2011–12 MPR includes the graphical presentation of cost and schedule status, the analysis of lessons learned including for projects which have met the exit criteria and been removed from the MPR, the activities undertaken by the DMO to reduce schedule slippage, and an analysis of the use by, and value of, the MPR by external stakeholders (refer to Parts 2, 3 and Appendices).

Report structure

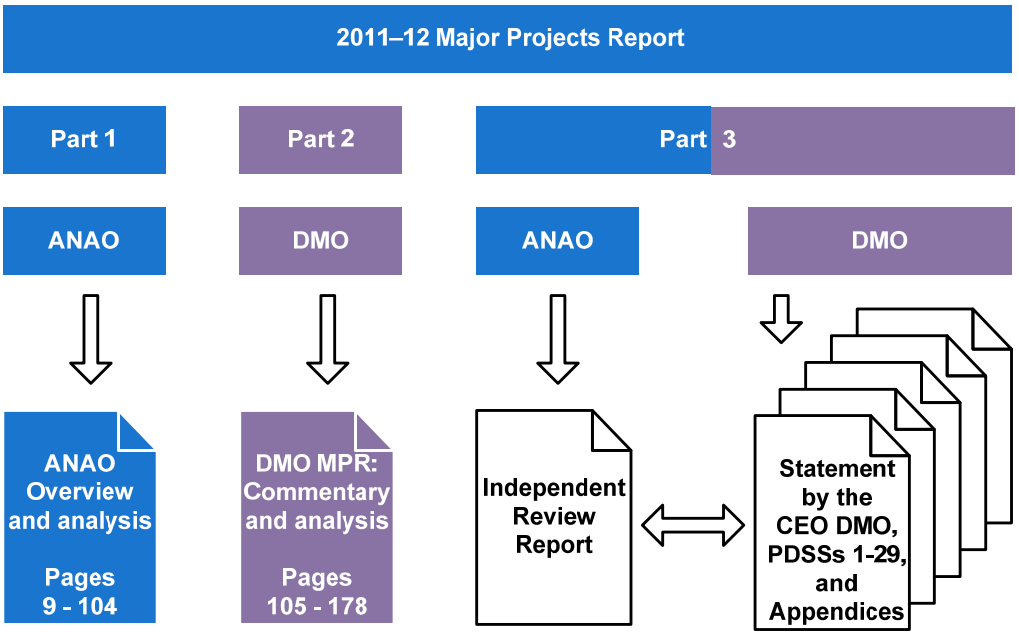
1.5 This report is organised into three parts as shown in Figure 1, below:

- Part 1 comprises the ANAO's overview, incorporating a Summary, Chapter 1 *2011–12 MPR Review*, Chapter 2 *Projects' Performance*, and Chapter 3 *Governance and Business Processes*;

- Part 2 comprises the DMO's commentary and analysis (not included within the scope of the Auditor-General's formal review); and
- Part 3 incorporates the Auditor-General's Independent Review Report and formal review conclusion; the Statement by the CEO DMO; and the 29 PDSSs prepared by the DMO as part of the assurance review process.

Figure 1

Report structure



1.6 Each Major Project included within the PDSSs includes information on individual project performance; the approved budgeted cost and expenditure, schedule and the DMO's assessment of progress toward delivering those aspects of key capabilities for which the DMO is responsible. This information has been prepared by the DMO having regard to the DMO MPR Guidelines (the Guidelines) endorsed by the JCPAA and provided to project offices for completing the PDSSs.[39] Each PDSS comprises:

[39] The Guidelines for the 2011–12 MPR were endorsed by the parliamentary Joint Committee of Public Accounts and Audit in May 2012. The Guidelines establish the requirements for DMO project offices to provide complete and accurate Project Data Summary Sheets and supporting information for the ANAO to review.

- Section 1—Project Summary: including project description, current status (which now includes a project financial assurance statement), context, unique features, major challenges, and reference to other projects that depend on the reported project to achieve their objectives;
- Section 2—Financial Performance: including an outline of the project's budget and expenditure, as well as variances over the life of the project to date, in addition to major contracts in place (and quantities delivered as at 30 June 2012);
- Section 3—Schedule Performance: provides information on the project's design development, and test and evaluation status; and forecasts and achievements against key project milestones including Initial Materiel Release (IMR)[40], Final Materiel Release (FMR)[41], Initial Operational Capability (IOC)[42] and Final Operational Capability (FOC)[43];
- Section 4—Project Cost and Schedule Status: represents the project's cost and schedule status in a graphical format as at 30 June 2012;
- Section 5—Materiel Capability Performance: provides a summary of the DMO's assessment of progress on delivering key capabilities (also referred to as Measures of Materiel Capability Performance);
- Section 6—Major Risks and Issues: outlines the major risks and issues faced by the project;
- Section 7—Project Maturity: provides a summary of the project maturity as defined by the DMO and comparison against their benchmark structure;

[40] Initial Materiel Release (IMR): A milestone that marks the completion and release of DMO acquisition project supplies required to support the achievement of Initial Operational Release. *Defence Portfolio Budget Statements 2010–11*, p. 152.

[41] Final Materiel Release (FMR): A milestone that marks the completion and release of DMO acquisition project supplies required to support the achievement of FOC. ibid.

[42] Initial Operational Capability (IOC): The point in time at which the first defined subset of a capability system that can be operationally employed is realised. IOC is a capability state endorsed at project approval at Second Pass, and reported as having been achieved by the Capability Manager. ibid.

[43] Final Operational Capability (FOC): The point in time at which the final subset of a capability system that can be operationally employed is realised. FOC is a capability state endorsed at project approval at Second Pass, and reported as having been reached by the Capability Manager. ibid.

- Section 8—Lessons Learned: outlines the key lessons that have been learned; and
- Section 9—Project Line Management: details current project management responsibilities within the DMO.

1.7 The main changes to the PDSSs are the addition of a project financial assurance statement in Section 1.2 Current Status—Cost Performance, the removal of expenditure in base date dollars in Section 2.1 and the inclusion of a graph in Section 4.1 depicting projects' cost and schedule status. These are explained further in this chapter and Chapter 2.

1.8 The Statement by the CEO DMO (p. 185) lists significant events that have affected the status of projects as set out in the PDSSs, since 30 June 2012.

1.9 Consistent with the Guidelines, information of a classified nature has been excluded from the PDSSs.

Review approach

1.10 In February 2012, the JCPAA identified the DMO MPR as a 'Priority Assurance Review' under section 19A(5) of the *Auditor-General Act 1997* (the A-G Act). The JCPAA has decided that this status applies to this and future reviews.[44] The main consequence of the Committee identifying a review as a priority assurance review is that it allows the ANAO full access to the information gathering powers under the A-G Act, rather than necessitating the agreement of an agency, in this case the DMO, for a review.

1.11 Prior to the JCPAA's decision, this review was conducted under an arrangement with the DMO in accordance with the provisions of section 20(1)(c) of the A-G Act.

1.12 The ANAO's review of the individual project PDSSs, which are contained in Part 3, was conducted in accordance with the Australian Standard on Assurance Engagements (ASAE) 3000 *Assurance Engagements other than Audits or Reviews of Historical Financial Information* issued by the Australian Auditing and Assurance Standards Board.

[44] Joint Committee of Public Accounts and Audit, Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*, May 2012, paragraphs 3.102 to 3.103, p. 33.

1.13 The ANAO's review of the PDSSs excludes from the review's scope, future dates or events (including forecasts on delivering the capability set out in Measures of Materiel Capability Performance), risks and issues. Additionally, with the introduction of the project financial assurance statement, which provides readers with additional information on the sufficiency of remaining project budgets, this statement has also been excluded from the scope of the review.

1.14 This information relates to events and depends on circumstances that have not yet occurred or may not occur, or have occurred but have not yet been identified. Accordingly, the conclusion of this review does not provide any assurance in relation to this information. Table 3, below, details the PDSS items out of scope for the review due to their high levels of inherent uncertainty.

Table 3

Items excluded from the scope of the formal review conclusion

PDSS Table	Out of Scope	Reference in ANAO Review Conclusion – 'Scope'
1.2 Project financial assurance statement	Complete statement	(a)
1.3 Project Context	Future dates	(d)
1.3 Major Challenges	Complete table	(b)
3.1 Design Review Progress	Future dates	(d)
3.2 Contractor Test and Evaluation Progress	Future dates	(d)
3.3 Progress Toward Materiel Release and Operational Capability Milestones	Future dates	(d)
5.1 Measures of Materiel Capability Performance	Complete table	(c)
6.1 Major Project Risks	Complete table	(b)
6.2 Major Project Issues	Complete table	(b)

1.15 The JCPAA endorsed the 2011–12 Guidelines in May 2012. The Guidelines establish the requirements for the DMO project offices to provide complete and accurate information to support PDSSs for the ANAO to review.

1.16 The JCPAA also considered the MPR Guidelines a stable document, reflecting the requirements of the MPR, and in the interests of administrative efficiency recommended the ANAO take responsibility for updating them and

presenting them to the JCPAA for endorsement.[45] This was subsequently agreed to by the Auditor-General for MPR Guidelines from 2012–13.

1.17 The ANAO's review of the information presented in the individual PDSSs included:

- an examination of each PDSS;
- a review of relevant processes and procedures used by the DMO in the preparation of the PDSSs;
- an assessment of the systems and controls that support project financial management, risk management, and project status reporting;
- a review of documents and information relevant to the PDSSs;
- interviews with persons responsible for the preparation of the PDSSs and those responsible for the management of the 29 projects;
- taking account of industry contractor comments provided to the DMO on draft PDSS information;
- assurance by the DMO managers attesting to the accuracy and completeness of the PDSSs;
- an examination of confirmations provided by the Secretary of the Department of Defence and Chief of the Defence Force, from the Capability Managers, relating to each project's progress toward IMR and FMR, and IOC and FOC;
- an examination of the management representations by the Chief Finance Officer (CFO) of the DMO and supporting project financial assurance statements; and
- an examination of the statement and management representations by the Chief Executive Officer (CEO) of the DMO.

1.18 While our work is appropriate for the purpose of providing an independent review report in accordance with ASAE 3000, our review is not as extensive as individual project performance audits conducted by the ANAO, in terms of the nature and scope of project issues covered, and the extent to which evidence is required by the ANAO. Consequently, the level of assurance

[45] ibid., p. xiii.

provided by this review in relation to the projects in the MPR is less than that typically provided by our performance audits.

1.19 Project performance audits by their nature, are typically narrower in scope, and more considerable in detail. The MPR, in contrast, now reviews a portfolio of 29 projects each year. Consequently, the MPR is better positioned to examine systemic issues and provide for longitudinal analysis for the projects being examined, and may also reflect, or have implications for general project management practices in the DMO. However, key themes from ANAO performance audits on major Defence acquisitions or their governance, are provided or referenced, to provide additional context and insights into the Major Projects.

Areas of review focus

1.20 The initial stage of the ANAO's development of processes and procedures to provide independent assurance over the PDSSs, focused on reviewing the DMO's project management and reporting arrangements, and the number and nature of processes in place that contribute to the overall governance of Major Projects within the DMO. This encompassed the following:

- the financial control framework, particularly as it applies to managing price indexation in an out-turned budget environment, and the reporting of the financial information contained within Section 2 of the PDSSs;
- ongoing review of the Enterprise Risk Management Framework and major risk and issue data contained in the PDSS from each project;
- specific programs for the management of acquisitions such as: Gate Reviews[46], the tailored oversight arrangements for projects on the Projects of Concern list, the Early Indicators and Warnings System implemented to help identify and correct potential problems with projects, and skilling initiatives within the Commonwealth and industry;

[46] ANAO Audit Report No.52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*.

- consideration of measures recommended[47] or areas of specific interest noted by the JCPAA, including the following:
  - the standardised graphical representation of each project's cost and schedule variance for inclusion in the PDSSs (refer to Part 3);
  - for each project which meets the exit criteria and has been removed from the MPR, the lessons learned at both the project level and the whole-of-organisation level (refer to Part 2 and Appendices);
  - the activities being undertaken by the DMO to reduce schedule slippage and the results of those activities (refer to Part 2);
  - the use by, and value of, the MPR by external stakeholders (refer to Part 2); and
  - analysis of the use of the Earned Value Management System (EVMS) and contingency management.

1.21 This review informed the ANAO's understanding of the DMO systems and processes used to populate the PDSSs for 2011–12, and highlighted issues in those systems and processes that could be beneficially addressed by the DMO in the longer term.

Efficiency of the MPR development process

1.22 The MPR is maturing as a process, and for many project managers in the DMO, the production of PDSS information is now able to be completed using the benefit of previous experience. Consistent with previous years, the DMO project offices prepared indicative PDSSs and supporting evidence packs, which were reviewed by the ANAO during visits to project offices prior to 30 June 2012.

1.23 Pre 30 June 2012 review activity was completed within the agreed schedule, and the project offices were generally able to provide evidence which was more complete and draft PDSSs which were generally of a higher quality, than in previous years. As a result, there were efficiencies for both organisations associated with assuring information accuracy within the PDSSs.

[47] Joint Committee of Public Accounts and Audit, Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*, May 2012, p. xiii.

1.24 The quality of briefings and supporting documentation provided by some project offices was very high, not only demonstrating high levels of understanding of the MPR process, but also aimed at addressing any prior year concerns or enhancing the quality of the PDSSs.

1.25 Stabilisation of the processes required for projects, i.e. the Guidelines, which the JCPAA now consider a stable platform for the preparation of the MPR, and also the number and consistency of projects included from year to year, will allow both the ANAO and the DMO to focus on the longitudinal analysis and benefits expected to be realised from this work.

1.26 However, it will be important that the DMO ensures adequately experienced and skilled resources are allocated to the management of the DMO MPR development and compilation process going forward, as the MPR process requires sound project management, financial reporting and extensive stakeholder liaison throughout the preparation of the DMO section of the report. Additionally, as reporting requirements evolve, it will be important that the DMO Executive maintain their involvement and allocate sufficient appropriate resources to the MPR process.

Review outcomes

Financial control framework

1.27 The ANAO reviewed the financial control framework supporting the DMO's management of its Major Projects. In particular, this review sought to examine projects' management of price indexation in an out-turned[48] budget environment and the resulting assertions in support of project financial assurance statements, as proposed by the DMO and endorsed by the JCPAA[49] for the 2011–12 MPR. The ANAO's review included:

- identification of key controls;
- establishing the aim of each control, including whether the control was preventative or detective, and how frequently the control was applied;
- identification of the implications of failure of each of these controls; and

[48] Out-turned prices are estimates adjusted to incorporate the expected rate of inflation. *Defence Portfolio Budget Statements 2007–08*, p. 346.

[49] Joint Committee of Public Accounts and Audit, Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*, May 2012, paragraphs 3.24 to 3.25, p. 19.

- identifying, in light of the findings of this review, any significant control weaknesses.

1.28 In prior years, the MPR Guidelines have required expenditure to be reported in base date dollars for some projects[50], a requisite which the DMO was not able to meet in all cases and for this reason previous Review Reports by the Auditor-General have required qualification. As a consequence, the resolution of this matter has been the focus of ongoing deliberations between the JCPAA, the ANAO and the DMO.

1.29 In 2010–11, particularly in relation to base date dollars, the ANAO found that the application of the financial control framework differed in respect of each of the projects examined, with a wide range of corporate and project management systems being employed and varying financial management policies adopted across project offices. As a result, there was inconsistency between the information produced by each project's record keeping systems, and any efficiencies which might have been gained by adopting a consistent approach to reviewing each PDSS were limited.

1.30 During 2011–12 the DMO proposed that PDSS financial information be presented in an out-turned format, consistent with the way DMO projects are now managed financially and with the way project financial information is now required to be presented in other public documents.[51]

1.31 While generally supportive of the out-turned presentation, the ANAO was initially concerned that the DMO's proposal would result in a reduction in the level of information disclosed, as the disaggregation of price indexation would no longer be visible.

1.32 To mitigate any perceived reduction in the level of information provided, the CEO DMO proposed that projects also include a project financial assurance statement in their PDSS, to provide an overall assessment of the project's budgetary position in terms of whether there is sufficient budget remaining to complete the project.

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[50] By converting the actual expenditure on a project to base date dollars, an assessment was able to be made of the performance of the project against its originally approved budget (base date dollars). Base date dollars is the amount, adjusted for the impact of inflation (prices) and foreign exchange movement over the period from a specified date (usually Second Pass Approval), in order that the initial budgeted cost of a project could be compared to the actual expenditure over time, in *like terms.*

[51] Department of Finance and Deregulation, Estimates Memorandum – 2011/36, *Defence Major Capability Costing Requirements,* 18 October 2011.

1.33 The JCPAA accepted that preparation of base date dollar information was unduly onerous and accepted the DMO's proposal, and endorsed the proposed out-turned presentation of financial information for this and future MPRs, with the inclusion of a project financial assurance statement for each project.

1.34 The Committee made clear its intention to 'closely monitor the reliability of project financial assurance statements over time and … revisit the issue if needed'.[52] The ANAO has reviewed the assurance framework which will support the project financial assurance statements, although the statements are excluded from the formal review conclusion.

1.35 The CFO DMO has provided overarching assurance through:

(a) the DMO Budget Estimates and Additional Estimates review processes;

(b) the development of a specific DMO Finance Instruction for projects regarding the project financial assurance statement in the PDSS;

(c) representations and sign-offs from accountable officers within DMO responsible for the delivery of projects in the MPR; and

(d) independent assurance by a third party over a sample of projects in the MPR, aimed at ensuring that sufficient and appropriate procedures and controls are in place to support the project financial assurance statement.

1.36 The projects in the 2011–12 MPR included in the external review of project financial assurance statements described above, along with a brief description of the factors that led to their inclusion in the sample, were[53]:

- AWD Ships—applying an average, fixed Specialised Military Equipment Weighted Average (SMEWA) index to the Program budget may not be sufficient to fund the actual cost increases and liabilities defined in the project's contracts;
- Overlander Vehicles—Medium Heavy Capability (MHC) affordability will impact the overall capability, with costs being managed by maximizing Off-The-Shelf solutions;

[52] Joint Committee of Public Accounts and Audit, Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*, May 2012, paragraphs 3.32 to 3.33, p. 20.

[53] Australian National Audit Office, *2011–12 Major Projects Report*, Part 3, Project Data Summary Sheets.

- LHD Ships—contracted indices escalation may exceed the supplementation provision;
- ANZAC ASMD 2B—there is a risk that indices used in the Prime contract, particularly labour rates, may exceed current predictions; and
- Additional Chinook—an outcome of the 2012 Budget was the re-phasing of the project budget across the forward estimates to reduce the spend profile, particularly in the 2013–14 financial year.

1.37 Separately, in relation to MRH90 Helicopters, the project's financial assurance statement reflects ongoing consideration of a range of matters including budget and contingency: 'DMO is conducting negotiations with the prime contractor to settle a number of commercial, technical and scheduling issues, including compensation for late deliveries. Following the finalisation of these negotiations DMO will undertake a review of the project budget, including levels of contingency.'

1.38 The DMO has been advised by the Department of Finance and Deregulation[54] that contingency should be used to fund any shortfalls in project funds due to price escalation (as is referred to in paragraph 3.46). Of the projects listed above, AWD Ships, LHD Ships, ANZAC ASMD 2B and MRH90 Helicopters have allocated contingency for this reason. As noted previously, projects will only be considered for further indexation once contingency is exhausted.

1.39 In conclusion, for the 2011–12 MPR, the CFO's representation letter to the CEO DMO on the project financial assurance statements, was unqualified, to reflect the DMO's confidence that it will complete within budget for these projects. However, the project financial assurance statement is restricted to being made under the following limitations: it is subject to current financial contractual obligations of the DMO for these projects; and is made as at 30 June 2012 given current known risks and estimated future expenditure.

Prospective information

1.40 Statements about the future, by their very nature, involve uncertainty and rely on circumstances that may or may not occur. From an assurance

[54] Department of Finance and Deregulation, Estimates Memorandum – 2011/36, *Defence Major Capability Costing Requirements*, 18 October 2011.

review perspective, the risk of misstatement about future occurrences is higher than the risk of a misstatement about an event that has occurred and where sufficient documentary evidence can be provided. Generally, the longer the timeframe involved in the forecast, the more uncertain are the underpinning assumptions, and the greater the risk of actual outcomes differing materially from forecast outcomes.

1.41 Some information in the DMO's PDSSs contains forecasts for achieving project milestones (for example, FMR and FOC) and expected developments which may impact on the project (for example, technology development). Presently, this information draws on a large range of the DMO and contractor systems and processes, with varying levels of internal control.

1.42 The risks for an assurance review in relying on the underpinning assumptions in relation to prospective information reported about projects have been highlighted on recent occasions. This has included the discovery, after relevant projects have been approved by government, that the assumed risk profile for the projects was not soundly based, and that project maturity scores provided to government to assist decision making are at times overly optimistic.[55]

1.43 Greater levels of internal and independent validations of assumptions in relation to projects, including in relation to the developmental maturity of the equipment offered, would need to be available to include them within the assurance review scope.

1.44 Prospective information has been excluded from the scope of our review. Nevertheless, the ANAO and the DMO have continued to invest resources in this area as part of the development of the 2011–12 MPR. However, the ANAO's assessment of the systems and processes currently in place is that they do not provide sufficient documentary evidence over prospective information within the PDSSs to support the information being included in the review by the ANAO.

Major risks and issues

1.45 Major risks and issues were out of scope in the 2010–11 MPR, and the ANAO's review concluded that while the DMO continued to work toward

[55] Australian National Audit Office, *2010–11 Major Projects Report*, Part 1, paragraph 36, p. 23.

improving the standard of risk management arrangements applying to Major Projects, the inherently uncertain nature of risks and issues meant that PDSS data could not be considered complete because of unknown risk and issue events that may emerge in the future. For this reason, under arrangements for the 'Priority Assurance Review', major risks and issues data in the PDSSs continue to remain out of scope.

1.46 Nevertheless, the ANAO again engaged with the DMO on developments with risk management at an enterprise and project level in order to continue to develop its understanding of the DMO's risk management systems and processes.

1.47 The development of the DMO's Enterprise Risk Management Framework (ERMF) was identified in 2008–09 by the ANAO as a challenging but necessary step for the DMO in striving to achieve its goal of improving project management, which was consistent with advice from the DMO that it would take some time before reliance could be placed on the framework.[56] The ANAO highlighted particular challenges, such as the gap between risk management practices and those preferred practices as set out in the ERMF.[57]

1.48 Risk management also became a major focus on the sustainment side of the DMO's business in response to the *Plan to Reform Support Ship Repair and Management Practices* (Rizzo Report). The Rizzo Report stated that 'Navy and DMO need to improve coordination and integrate their interdependent activities more effectively'[58] and as a result, recommended that Navy and the DMO establish an Integrated Risk Management System.[59]

1.49 As part of implementing this recommendation, the DMO Enterprise Risk Management team has developed a risk management system, the Interdependent Mission Management System (IMMS).[60] The IMMS is intended to substantially provide for a vertical (from the enterprise level to the

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[56] Dr SJ Gumley, *Official Committee Hansard*, Joint Committee of Public Accounts and Audit Hearing, 15 March 2010.

[57] Australian National Audit Office, *2008–09 Major Projects Report*, Part 1, pp. 38–39.

[58] Paul J Rizzo, *Plan to Reform Support Ship Repair and Management Practices,* July 2011, p. 7. See: <http://www.defence.gov.au/oscdf/rizzo-review/Review.pdf> [accessed 7 November 2012].

[59] ibid., p. 12.

[60] Australian National Audit Office, *2011–12 Major Projects Report*, Part 2, paragraphs 1.42 to 1.46, pp. 136–137.

workforce) and some horizontal (at each step in the process across Navy and the DMO) management of risks across the DMO and Capability Managers, as well as the interdependent risks of both, and introduce greater accountability in relation to risk management.[61]

1.50 The DMO expects that, in addition to sustainment, the new system would be relevant to the acquisition side of its business. The ANAO appreciates that this is still in the formative stages and will monitor its progress in 2012–13.

1.51 At the project level, the ANAO's review indicates that there has been progress in improving the consistency of risk management across the Major Projects with a corporate focus on providing increased training and support.

1.52 The ANAO observed improvements to projects' risk management processes, with some projects undergoing workshops and reviews during 2011–12, which has improved the quality of information in project risk logs.

1.53 However, one of the DMO's mandated systems for managing risks[62], Predict!, continued to encounter problems during 2011–12. The ANAO observed that the methodology used to categorise and apply ratings to risks had changed, following updates to the system by administrators, without advising project managers. There were also issues with functionality and reporting, with ongoing integration issues between spreadsheets and the risk management software tool.

1.54 Separately to IMMS, the DMO Standardisation Office has done some work to develop a risk categorisation framework, which is expected to be finalised by the end of 2012. The framework is intended to add discipline to the categories of risks and the entry of data, and to create a way of managing risks both vertically and horizontally, to help form an understanding of the impact of risks at the different levels. It is expected that the framework will add more consistency to the way the DMO manages risks across projects.

1.55 Reporting of emergent risks was introduced for the first time in the 2009–10 MPR (risks that had not been previously identified but emerged as major risks during the year). This was intended to address the JCPAA's

[61] The DMO has indicated that a pilot risk management program using IMMS is planned for implementation in the FFG System Program Office.

[62] Excel spreadsheets are also mandated.

interest in improving the clarity of the emergence of risks over the course of a project's duration.

1.56 Emergent risks listed in the 2011–12 PDSSs cover new major risk entries not previously listed by the project as at 30 June 2011.[63] The ANAO expects that further development and tracking of emergent risk data over the next few years could support analysis around the type of major risks that emerge each year and how well risk management mechanisms are anticipating major risks.

1.57 Finally, the DMO is further developing its understanding of the risk profiles associated with acquisition projects across their lifecycle. In addition to the typical risk profiles associated with the type of acquisition (MOTS, Australianised MOTS, and Developmental projects), the DMO is exploring how the risk profiles of projects alter through time as the project proceeds.

1.58 For example, as the DMO prepares to enter into a contract with industry, risk management processes should be able to clearly identify the nature and severity of contract risks, which may then take on a focus as one of the areas of major risk management for the project at that time. As a project progresses, risks associated with achieving the expected capability can arise, and the risk management processes in place to identify and manage risks will refocus on delivering the expected capability.

1.59 While this work is in its early stages, the DMO anticipates that this information will flow through to risk management and contingency processes. The ANAO will continue to review the DMO's progress on risk management across the Major Projects in 2012–13.

Project key capability measures—Materiel Release Milestones and Completion Criteria

1.60 The DMO's evaluation of the probability of delivering key capabilities, as denoted by Materiel Release Milestones (MRMs) in Materiel Acquisition Agreements (MAAs) (which specify completion criteria for the achievement of materiel release to the ADF), is set out as a 'traffic light' pie chart in Section 5.1

[63] In 2011–12, this applied to the Super Hornet, LHD Ships, MH-60R Seahawk, Joint Strike Fighter, ARH Tiger Helicopters, Air to Air Refuel, FFG Upgrade, Bushmaster Vehicles, ANZAC ASMD 2B, Additional Chinook, Collins RCS, Hw Torpedo, UHF SATCOM, Stand Off Weapon, 155mm Howitzer, and C-RAM projects.

of each project's PDSS. MRMs primarily focus on the anticipated future attainment of particular technical, regulatory and operational requirements.

1.61 Whereas some MRMs are evidenced by past events (for instance, that a capability was fulfilled on a date which has already occurred), the majority of other MRMs necessitated the DMO project managers to judge the likelihood of delivering in the future, the parts of the key capability for which the DMO is accountable.

1.62 Inevitably, this assessment typically involves making certain assumptions in predicting achievements and is consequently subjective in approach. Taking into consideration this subjectivity and inherent uncertainty, this information continued to be excluded from the scope of the ANAO's review. Nonetheless, in view of this caveat, the ANAO incorporated analysis of the DMO's data concerning its capability forecasts in addition to our analysis of projects' performance in regard to budgeted cost and schedule in Chapter 2.

1.63 Additional ANAO analysis of capability performance is set out from paragraph 2.60.

2. Projects' Performance

Introduction

2.1 Key project performance information is important in monitoring each of the three major dimensions of a project, i.e. whether Major Projects are within budget, on schedule and expected to deliver the required level of capability. Such information provides an indication of project performance and a focus for management attention.

2.2 In analysing the three major dimensions of a project, three key indicators have been derived from data in the Project Data Summary Sheets (PDSSs) to provide snapshots on project performance. These indicators are:

- the percentage of budgeted cost expended—measures the total expenditure as a percentage of the total current budget;
- the percentage of scheduled time elapsed—measures the percentage of time elapsed from original approval to the forecast Final Operational Capability (FOC); and
- the percentage of key capabilities expected to be delivered—is the DMO's assessment of the likelihood of delivering the required level of capability specified in the Materiel Acquisition Agreement (MAA).[64]

2.3 As in the 2010–11 MPR, the ANAO has included an analysis of the above indicators against an assessment of project maturity, based on project managers' judgement at defined milestones, as a percentage of the total score available.[65] The maturity score is one of the key indicators outlined by DMO management to assess the status of major acquisition projects.

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[64] For those projects approved by government from 1 March 2010, as specified in Joint Project Directives (JPDs). Department of Defence, Information DEFGRAM No. 50/2010, *New Key Documents for Capability Development and Acquisition Activities*, 4 February 2010.

[65] Source 1: The Project Maturity Score comprises a matrix of seven attributes: Schedule, Cost, Requirement, Technical Understanding, Technical Difficulty, Commercial, and Operations and Support. The Project Manager assesses the level of maturity that a project reaches at a particular milestone for each of these attributes on a scale of 1 to 10. Australian National Audit Office, *2011–12 Major Projects Report*, Appendix 4, pp. 571–572.

Source 2: The maturity score is defined by the DMO as the maturity of a project by way of a score based on the project managers' judgement at defined milestones in its capability development and acquisition phases. Australian National Audit Office, *2011–12 Major Projects Report*, Appendix 4, p. 571. The more accurate the maturity score then the more reliable the estimate of a project's progress and the greater the confidence the project team would have in pursuing outstanding requirements.

2.4 The first snapshot, Figure 2, at page 52, provides an overview and sets out the percentage of budgeted cost expended, the percentage of the scheduled time elapsed and the percentage of key capabilities expected to be delivered by the DMO.[66] As in 2010–11, the figure shows that, for most projects, the budgeted cost expended is broadly in line with, but lagging behind, the proportion of time that has elapsed in the project's schedule.[67]

2.5 The exceptions, where budgeted expenditure is leading the elapsed time by approximately 20 per cent, continue to include the two Collins Class Submarine projects (replacement combat system, and reliability and sustainability enhancements), where most of the materiel has been acquired and expenditure undertaken, but there have been difficulties in obtaining sufficient time in the submarines' full cycle docking program to complete the project.[68] Additionally, in 2011–12 this includes LHD Ships, where materiel and equipment has been acquired in advance of installation.

2.6 Projects where the time elapsed is approximately 20 per cent greater than the budget expended, include:

- MRH90 Helicopters, where developmental issues delayed schedule;
- Overlander Vehicles, where there are delays due to extended contract negotiations for Phase 3B (Medium/Heavy Capability);
- C-17 Heavy Airlift, which has experienced schedule delays in the delivery of long lead spares and the Cargo Compartment Trainer;
- Hw Torpedo, where delays in the Collins Class Submarines' full cycle docking program impacted the installation programs;

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66 Source 1: A project's budgeted cost and schedule data is the position as at 30 June 2012, and may differ from originally approved budgets and schedules.

Source 2: As the DMO's assessment of the likelihood of delivering key capabilities involves high levels of uncertainty which may cause actual outcomes to differ materially from that stated in the PDSSs, this data and the DMO's assessment is outside the scope of the ANAO's assurance review for the 2011–12 MPR.

67 A project's budgeted cost expended is accrual based. In cases where pre-payments/committed funds have been made but have not been expensed/amortised (for example, the AWD Ships, Super Hornet, LHD Ships and C-17 Heavy Airlift projects), cash paid by a project will be greater than the percentage of budget expended as shown in Figure 2.

68 John Coles, *Collins Class Sustainment Review, Phase 1 Report*, 4 November 2011. See: <http://www.defence.gov.au/dmo/publications/Coles_Rpt_Ph1.pdf> [accessed 7 November 2012].

- 155mm Howitzer, where the acquisition of the Course Correcting Fuze capability through the Foreign Military Sales (FMS) procurement process has progressed but is still an issue;
- Battle Comm. Sys., where meeting design requirements continues to remain a challenge as the project is exposed to multiple platform design authorities, adding to schedule delays; and
- C-RAM, where some milestones are yet to be achieved under the FMS case to trigger payment.

2.7 Figure 2 also shows that the DMO's assessment is that 27 of the 29 projects will deliver all of their key capability requirements. Those not expected to deliver all of their key capability requirements include:

- Wedgetail, where the performance of the phased array radar will not meet the specification at final delivery; and
- MRH90 Helicopters, where key contractual and capability milestones have been impacted by the reduced flying rate of effort.[69]

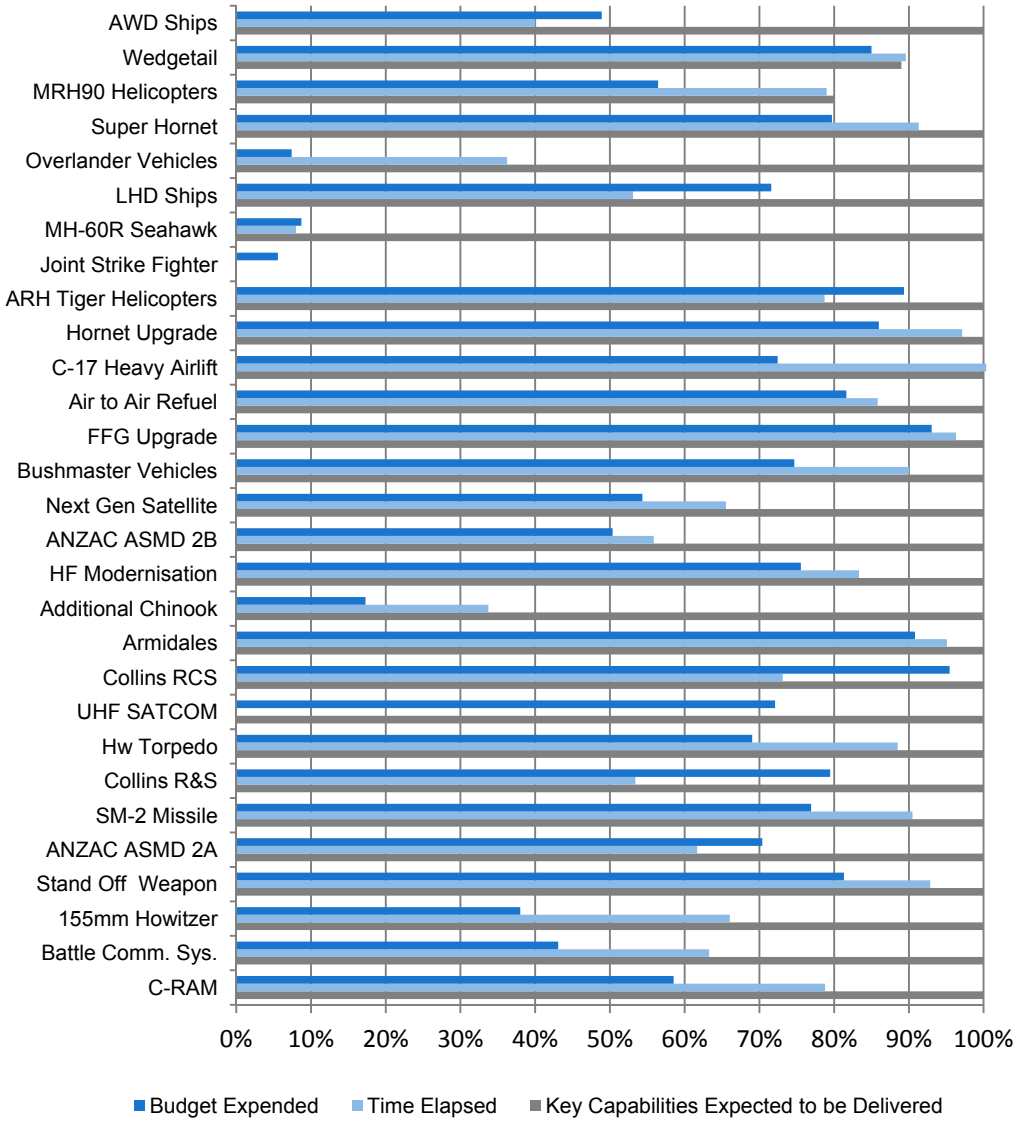
2.8 In the 2010–11 MPR, 155mm Howitzer was reported as not expected to deliver all of its key capability requirements. However, following the decision to progress the acquisition of the Course Correcting Fuze capability by December 2012, the DMO now expects to meet 100 per cent of its capability requirements.[70]

[69] A number of MRMs at 30 June 2012 include milestones relating to schedule, which are not strictly capability measures within the DMO framework.

[70] Australian National Audit Office, *2011–12 Major Projects Report*, Part 3, Project Data Summary Sheets.

Figure 2

Project snapshot—Budget expended, time elapsed, and key capabilities expected to be delivered by the DMO (percentage)



Source: 2011–12 Major Projects Report (MPR) and Australian National Audit Office (ANAO) analysis.

Note 1: Stage 1 of the Joint Strike Fighter project is approved to acquire 14 aircraft and commence training. IOC and FOC dates will be set under the planned Stage 2 approval. UHF SATCOM does not have an FOC as one was not defined at government approval.

Note 2: The key capability assessment for Wedgetail has been against the Supplies section of the MAA, which lists the equipment to be delivered.

Cost performance

Project snapshot—Budget expended and project maturity progress

2.9 The second snapshot, Figure 3, at page 55, sets out each project's budgeted cost expended against the project's maturity score progress.[71] As noted previously, Figure 2 shows that, for most projects, the budgeted cost expended is broadly in line with, but lagging behind, the proportion of time that has elapsed in the project's schedule. Figure 3 also shows that the project maturity score progress leads budgeted cost expended for the majority of the projects, and can vary significantly when compared to the budgeted cost expended.

2.10 This variance is a result of projects being awarded at least 50 per cent of the total maturity score by project managers at Second Pass Approval, which is normally prior to entering into a contract and making contractual payments. While both the project's maturity score progress and budgeted cost expended are indicators of a project's overall performance, by benchmarking the project maturity score progress against the budgeted cost expended, the variance provides an indication of the potential front-loading of the maturity score.

2.11 In 2011–12, the ANAO's analysis of Major Projects highlighted some inconsistencies in the application of the maturity score process as envisaged by the 2012 Defence Capability Plan (DCP). This included varying approaches between projects, but more importantly that the intent of the DCP to differentiate maturity score application for Military-Off-The-Shelf (MOTS) and Developmental projects had not occurred in all cases.

2.12 Projects where an approximate differential of 20 per cent existed at 30 June 2012 include: AWD Ships; MRH90 Helicopters; Overlander Vehicles; MH-60R Seahawk; Joint Strike Fighter; C-17 Heavy Airlift; Next Gen Satellite;

[71] Source 1: The DMO have advised that the project maturity score concept was not designed for a strictly linear representation of a project's progress. However, the ANAO's analysis has utilised a linear representation for comparative purposes in Figures 3, 8, and 13.

Source 2: The maturity score is defined by the DMO as the maturity of a project by way of a score based on the project managers' judgement at defined milestones in its capability development and acquisition phases. Australian National Audit Office, *2011–12 Major Projects Report*, Appendix 4, p. 571. The more accurate the maturity score then the more reliable the estimate of a project's progress and the greater the confidence the project team would have in pursuing outstanding requirements.

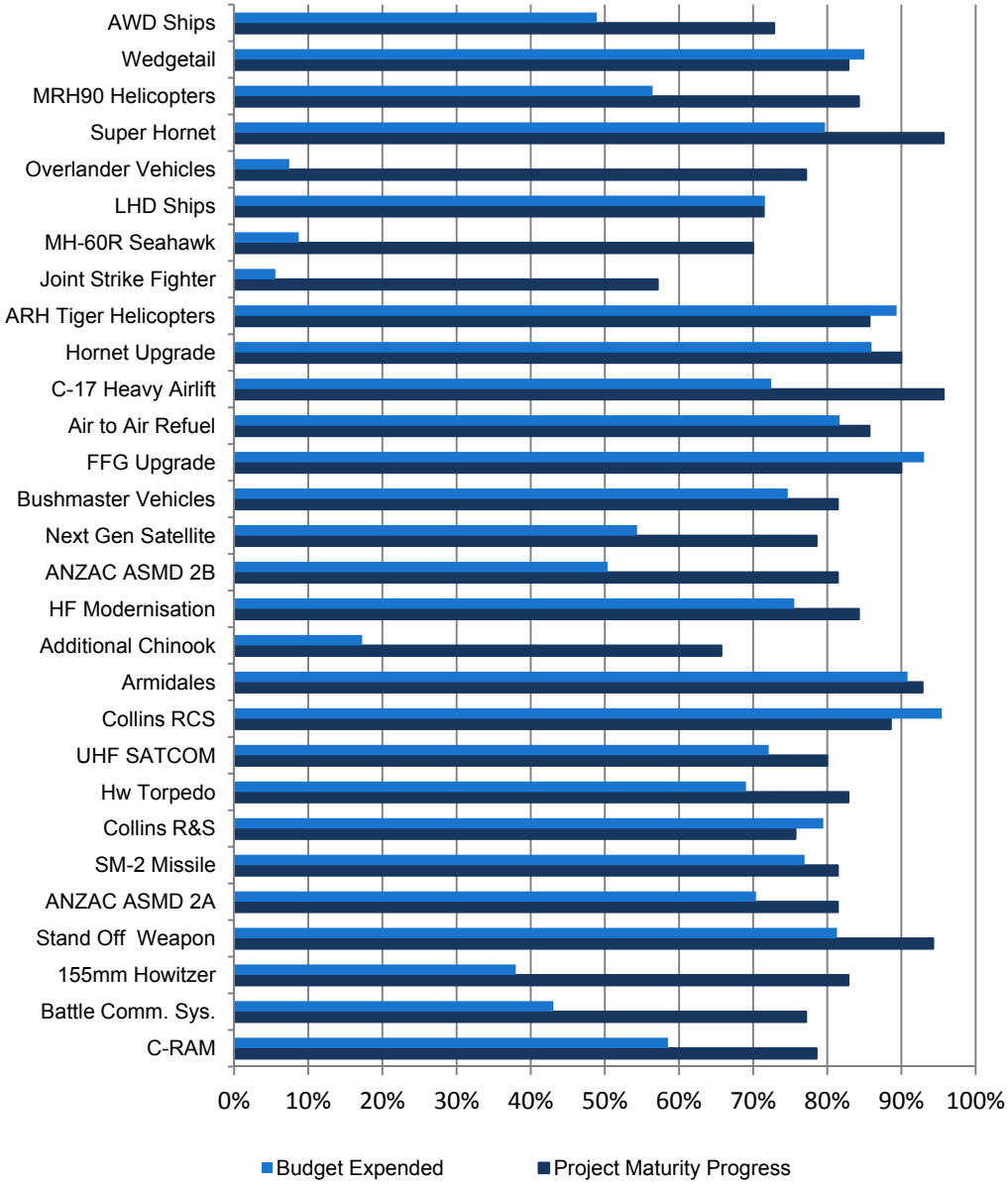
ANZAC ASMD 2B; Additional Chinook; 155mm Howitzer; Battle Comm. Sys; and C-RAM.

2.13 Of the projects above, all except ANZAC ASMD 2B are either MOTS or Australianised MOTS (AMOTS) and while these projects would normally be expected to involve lower levels of risk, further analysis of the process of compilation of project maturity scores, up to and including at Second Pass Approval, may provide future benefits as a key indicator of project maturity.

2.14 Consideration of project maturity and budget expended provides an indication of where overly optimistic assessments of a project's maturity may have been made, particularly during the early stages of a project's life cycle.

Figure 3

Project snapshot—Budget expended and project maturity progress (percentage)



Source: 2011–12 MPR and ANAO analysis.

Second Pass Approval and 30 June 2012 approved budgeted cost

2.15 For the 29 Major Projects covered in the 2011–12 MPR, Figure 4, below, compares each project's approved budgeted cost at Second Pass Approval (the main investment decision by government) and their approved budgeted cost at 30 June 2012. The total approved budgeted costs for the 29 projects at 30 June 2012 was $47.3 billion, a net increase of $5.9 billion compared to their Second Pass Approval approved budgeted cost ($41.4 billion). The $5.9 billion comprises price variation increases of $7.5 billion[72], real variation[73] increases of $2.7 billion, and foreign exchange rate movement decreases of $4.3 billion.[74]

2.16 Additional quantities of equipment being ordered after Second Pass Approval can result in a real budget increase. As noted in the 2010–11 MPR, the major component of the real budget increase noted above includes MRH90 Helicopter's real increase of $2.4 billion for additional aircraft (increased from 12 to 46), and more recently for Bushmaster Vehicles, again for additional quantities requiring an extra $619.3 million. In prior years, there was also a net real budget decrease of $289.1 million for Air to Air Refuel.[75]

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[72] In July 2010, DMO moved to financially managing its acquisition budget on an out-turned price basis (this is further discussed in paragraph 2.18). This resulted in a price variation increase for each project by way of out-turning indexation adjustment.

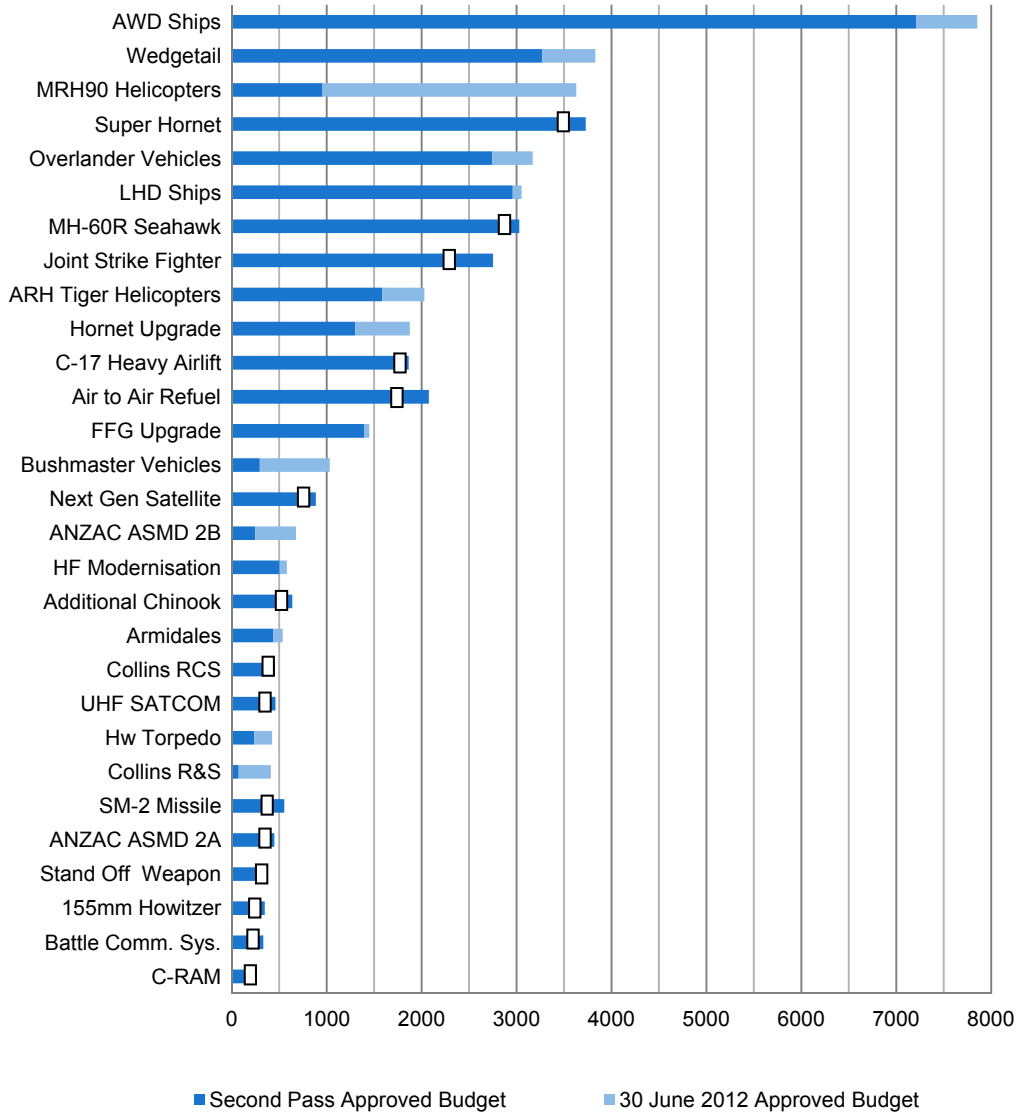
[73] Real variations in a project's budgeted cost are due to government approved changes, transfers within the portfolio and other administrative decisions post Second Pass Approval.

[74] Australian Government arrangements for foreign exchange variation involve 'no win/no loss' supplementation. As a matter of policy, unless specifically approved, individual agencies are not permitted to 'hedge' against foreign exchange risk.

[75] Australian National Audit Office, *2011–12 Major Projects Report*, Part 3, Project Data Summary Sheets.

Figure 4

Projects' Second Pass Approval and 30 June 2012 approved budgeted cost ($m)



Source: 2011–12 MPR.

Note: ▯ indicates that the budgeted cost for the project at 30 June 2012 (Super Hornet, MH-60R Seahawk, Joint Strike Fighter, C-17 Heavy Airlift, Air to Air Refuel, Next Gen Satellite, Additional Chinook, Collins RCS, UHF SATCOM, SM-2 Missile, ANZAC ASMD 2A, Stand Off Weapon, 155mm Howitzer, Battle Comm. Sys. and C-RAM) is less than the original budgeted cost.

Project budgeted cost variance

2.17 Approved budgeted cost variations are disaggregated by the DMO into three main factors: price indexation (material and labour), exchange rate and real variation. The first two factors are generally standard provisions in acquisition projects that extend over a number of years, and essentially represent budgeted cost variations that are outside the direct control of project management.[76]

2.18 From 1 July 2010, all projects' approved budgets include the total price indexation, adjusted for the Specialist Military Equipment Weighted Average (SMEWA)[77] or other appropriate index, to the point of the project's forecast FOC. This is defined as the budget being 'out-turned'.[78] In 2010–11 this indexation adjustment resulted in 23 of the 28 projects having received a one-off variation totalling $1.16 billion. Five projects which had been originally approved in out-turned prices had their approved out-turned budgets confirmed.[79] In 2011–12, no projects received a price indexation adjustment.

2.19 Real variations in project budgeted costs primarily reflect changes in the scope of projects, transfers between projects for approved equipment/capability, and budgetary adjustments such as administrative savings decisions.

2.20 Exchange rate variations in project budgeted costs are a result of projects' exposure to foreign currencies and movement in foreign exchange rates. Similar to the result for 2010–11, the Australian dollar was slightly stronger throughout the 2011–12 financial year, exceeding parity with the US dollar for a considerable period of time.

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[76] Australian Government arrangements for foreign exchange variation involve 'no win/no loss' supplementation. As a matter of policy, unless specifically approved, individual agencies are not permitted to 'hedge' against foreign exchange risk.

[77] Australian National Audit Office, *2011–12 Major Projects Report*, Part 2, paragraph 2.8, pp. 156–157.

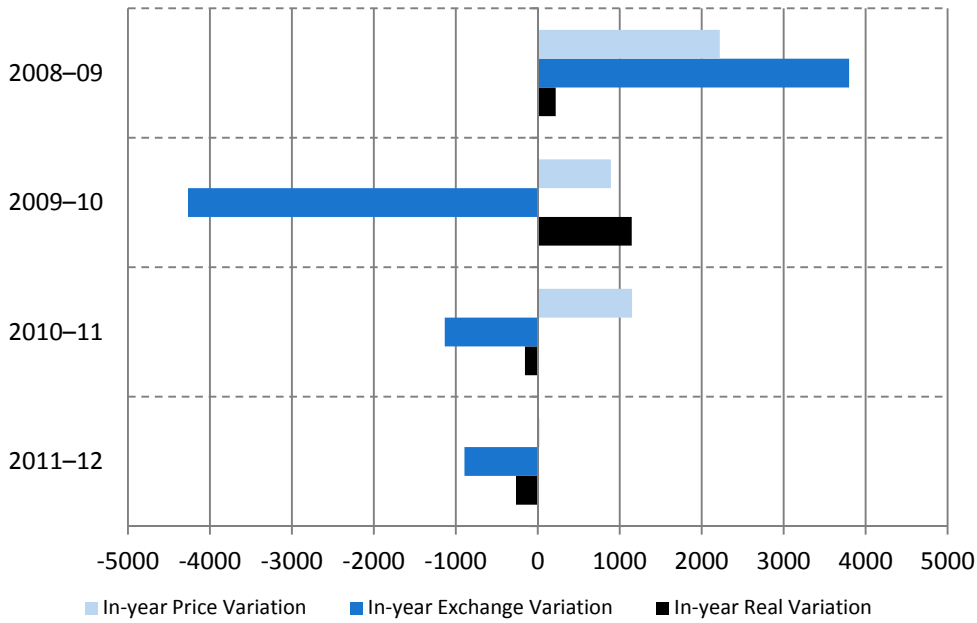
[78] ibid., paragraph 1.17, p. 127.

[79] This resulted in UHF SATCOM receiving a negative adjustment. Australian National Audit Office, *2010–11 Major Projects Report*, Part 2, Table 2.5, p. 149.

2.21 Figure 5, below, examines the three main factors contributing to budgeted cost variations in each of the last four years, and highlights the significant in-year impact of variations for the 29 projects in the 2011–12 MPR.

Figure 5

In-year (2008–09, 2009–10, 2010–11 and 2011–12) budgeted cost changes ($m)



Source: 2011–12 MPR and Project Cost Approval Histories.

2.22 In 2008–09, for the 29 projects covered by the 2011–12 MPR, the total project budgeted costs increased by $3.8 billion due to foreign exchange movements. In 2009–10, a stronger Australian dollar led to a $4.3 billion decrease in project budgeted costs. In 2010–11 and 2011–12, the project budgeted costs again decreased by $1.1 billion and $0.9 billion respectively, due to foreign exchange movements.

2.23 Overall, the 30 June 2012 approved budgeted cost of the 29 projects in the 2011–12 MPR decreased by $1.1 billion or 2.4 per cent, compared to their 30 June 2011 approved budget. This was driven by a decrease in foreign exchange variations of $894.6 million and real decreases of $267.3 million. Table 4, at page 61, sets out in-year budget comparisons by project.

2.24 In 2011–12, of the real variations affecting projects' budgets, the majority of changes are due to scope variations, mainly reductions. At the project level, the ANZAC ASMD 2B project recorded a 46.3 per cent increase in budget from 2010–11 ($213.8 million). This is mainly attributable to a real variation increase following government approval for the follow on ships 2-8, providing for work on an additional seven ships. The Joint Strike Fighter project recorded a 12.5 per cent decrease in budget from 2010–11 ($332.8 million). This is attributed to a $128.4 million decrease in exchange, and a $204.4 million real variation decrease as at 30 June based on an interpretation of the government's decision to vary the project's budget. Subsequent advice from the DMO, is that the reduction is expected to be re-instated after the finalisation of the 2011–12 reporting period.[80]

[80] Australian National Audit Office, *2011–12 Major Projects Report*, Part 3, Project Data Summary Sheets.

Table 4

2011–12 Prior Year Budget Comparison

Project	Approved Budget 2010–11 $m	Approved Budget 2011–12 $m	In-year Exchange Variation $m	In-year Real Variation $m	Total Variance $m	Total Variance (per cent)
AWD Ships	7 931.8	7 853.1	(78.7)	-	(78.7)	-1.0
Wedgetail	3 859.5	3 829.5	(30.0)	-	(30.0)	-0.8
MRH90 Helicopters	3 753.7	3 628.4	(125.3)	-	(125.3)	-3.3
Super Hornet	3 578.5	3 538.5	(40.0)	-	(40.0)	-1.1
Overlander Vehicles	3 263.9	3 171.2	(92.7)	-	(92.7)	-2.8
LHD Ships	3 122.6	3 052.1	(70.5)	-	(70.5)	-2.3
MH-60R Seahawk	3 029.8	2 910.2	(119.6)	-	(119.6)	-3.9
Joint Strike Fighter[1]	2 666.8	2 334.0	(128.4)	(204.4)	(332.8)	-12.5
ARH Tiger Helicopters	2 060.3	2 028.9	(31.4)	-	(31.4)	-1.5
Hornet Upgrade	1 917.5	1 875.5	(42.0)	-	(42.0)	-2.2
C-17 Heavy Airlift	1 848.9	1 844.4	(4.5)	-	(4.5)	-0.2
Air to Air Refuel	1 828.5	1 795.7	(32.8)	-	(32.8)	-1.8
FFG Upgrade[2]	1 528.9	1 449.6	(2.5)	(76.8)	(79.3)	-5.2
Bushmaster Vehicles[3]	929.8	1 032.1	(1.6)	103.9	102.3	11.0
Next Gen Satellite	880.9	861.1	(19.8)	-	(19.8)	-2.2
ANZAC ASMD 2B[4]	462.0	675.8	(0.8)	214.6	213.8	46.3
HF Modernisation[5]	670.8	580.1	0.5	(91.2)	(90.7)	-13.5
Additional Chinook	584.6	550.9	(33.7)	-	(33.7)	-5.8
Armidales	537.2	537.2	0.0	-	0.0	0.0
Collins RCS	450.4	449.9	(0.5)	-	(0.5)	-0.1
UHF SATCOM[6]	407.2	432.5	4.2	-	25.3	6.2
Hw Torpedo	425.4	425.1	(0.3)	-	(0.3)	-0.1
Collins R&S	411.4	411.4	0.0	-	0.0	0.0
SM-2 Missile [7]	612.0	398.8	(6.8)	(206.4)	(213.2)	-34.8
ANZAC ASMD 2A	389.5	386.0	(3.5)	-	(3.5)	-0.9
Stand Off Weapon	343.3	340.8	(2.5)	-	(2.5)	-0.7
155mm Howitzer	326.1	320.6	(5.5)	-	(5.5)	-1.7
Battle Comm. Sys. [8]	325.9	305.8	(13.1)	(7.0)	(20.1)	-6.2
C-RAM	264.2	251.4	(12.8)	-	(12.8)	-4.8
Total	**48 411.4**	**47 270.6**	**(894.6)**	**(267.3)**	**(1 140.8)**	**-2.4**

Sources: 2010–11 and 2011–12 MPRs, Part 3, Project Data Summary Sheets.

Note 1: A Real Cost Decrease was applied and is expected to be re-instated in the 2012–13 financial year.

Note 2: Real Variation adjustments resulted from savings identified being returned to the Defence Capability Program.

Note 3: A Real Variation adjustment resulted from an increased number of vehicles being included in the scope of the project.

Note 4: A Real Cost Increase resulted from government approval of follow on ships 2-8.

Note 5: A Real Variation adjustment resulted from a reduction in scope of the project to no longer include elements of the mobiles program that are not currently in contract.

Note 6: This project received a price indexation adjustment of $21.1 million to correct prior year errors.

Note 7: Real Variation adjustments resulted from a transfer to SEA 4000 Ph 3.2 and savings identified being returned to the Defence Capability Program.

Note 8: A Real Variation adjustment was made due to a decrease in scope.

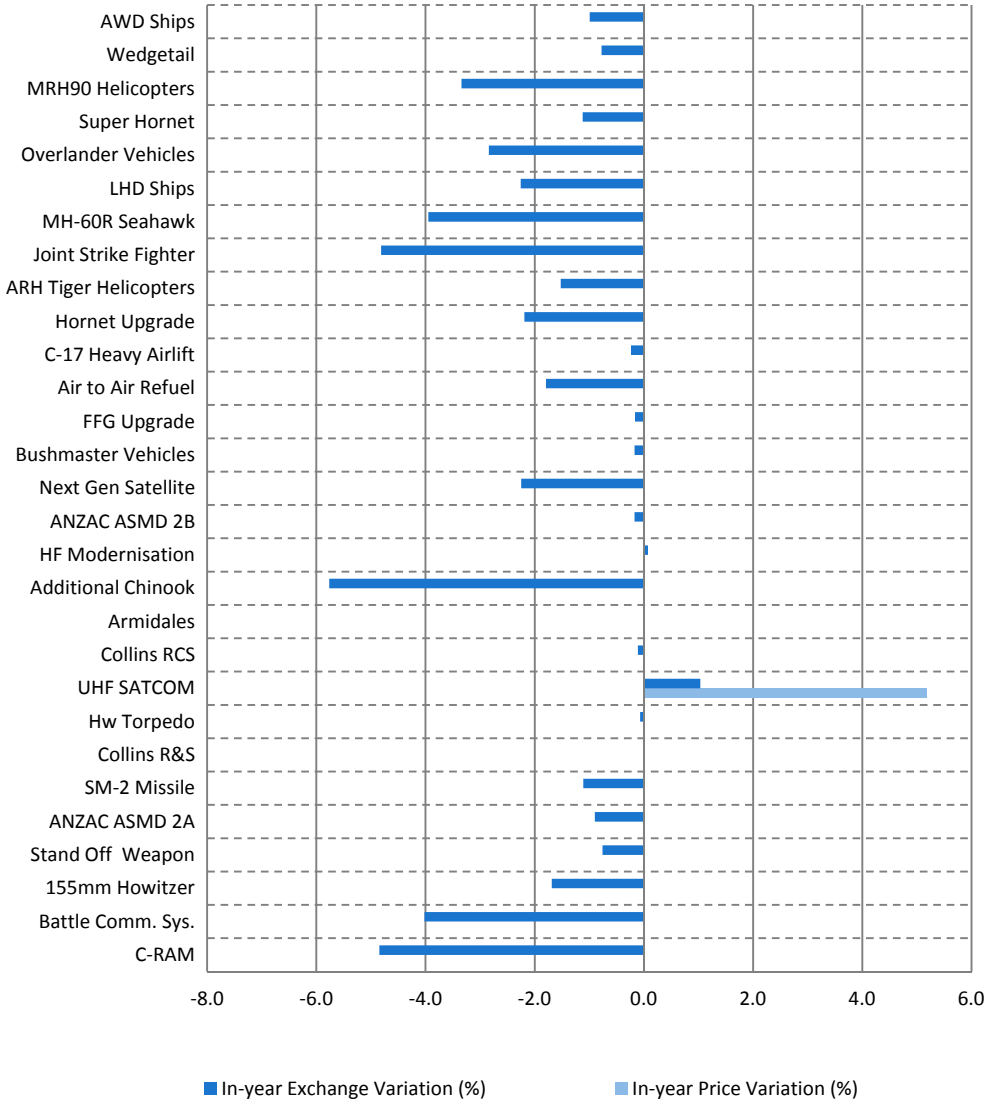
2.25 Figure 6, below, sets out the foreign exchange and price variation movement for each of the 29 projects' budgeted cost. In the 2010–11 MPR, for a number of projects there were significant movements in price variation, as a result of the out-turning indexation adjustment. This year none of these projects received a price indexation adjustment.

2.26 Projects with significant movements in foreign exchange, as a result of the stronger Australian dollar, include:

- Joint Strike Fighter ($128.4 million, or 4.8 per cent decrease in budgeted cost);
- Additional Chinook ($33.7 million, or 5.8 per cent decrease in budgeted cost); and
- C-RAM ($12.8 million, or 4.8 per cent decrease in budgeted cost).

Figure 6

In-year (2011–12) budgeted cost changes (percentage variation by factor)



Sources: 2011–12 MPR and Project Cost Approval Histories.

Note 1: UHF SATCOM received a price indexation and exchange rate adjustment of $21.1 million and $9.9 million, respectively, to correct prior year errors.

Forecast and actual expenditure

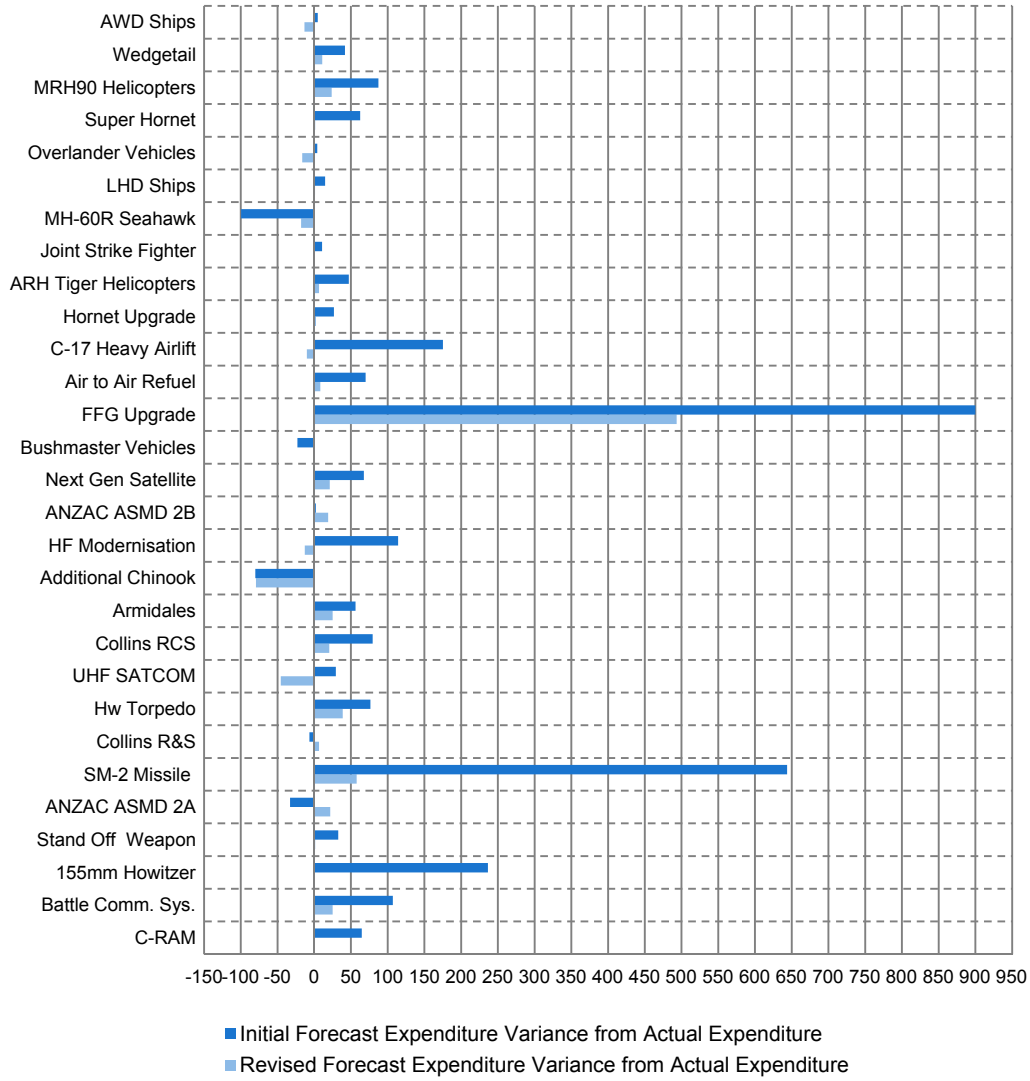
2.27 Accurately forecasting expenditure is an important element in the effective management of a portfolio of projects and understandably receives close attention within the Defence Organisation and by key stakeholders. Figure 7, below, sets out the expenditure forecasting performance of each project against the actual expenditure for the 2011–12 financial year. In total, the actual expenditure for the 29 projects at 30 June 2012 was $3.3 billion, against an initial forecast expenditure of $4.0 billion and half-year revised forecast of $3.2 billion. The main factors contributing to the variance were production/schedule delays, lower than anticipated FMS disbursements and foreign exchange fluctuations.

2.28 Compared to the initial budget allocation, significant underspends occurred in the MRH90 Helicopter ($183 million), Air to Air Refuel ($96.8 million) and LHD Ships ($90.8 million) projects. The overall project underspend in the portfolio of projects was less, however, due to some overspends, the most significant being MH-60R Seahawk which spent $213 million more than the initial project allocation of $0.8 million. In this context, the 2009 Defence White Paper stated that the acquisition of new naval combat helicopters was a 'matter of urgency'.[81]

[81] Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*. Defence White Paper 2009, Canberra, 2009, paragraph 9.16, p. 72.

Figure 7

In-year (2011–12) projects' forecast expenditure performance compared to actual expenditure (variance percentage)



Sources: 2011–12 MPR, Portfolio Budget Statements and ANAO analysis.

Schedule performance

2.29 The DMO continues to acknowledge that schedule remains its biggest concern in delivering and sustaining equipment for the Australian Defence Force (ADF).[82]

2.30 The third snapshot, Figure 8, below, sets out each project's percentage of scheduled time elapsed against the project's maturity score progress.[83] This highlights a variance between some projects' scheduled time elapsed and the maturity scores, which is a result of projects receiving at least 50 per cent of the total maturity score at Second Pass Approval. By benchmarking the maturity score progress against the scheduled time elapsed, any indication of potentially overly optimistic assessments of a project's maturity can be assessed.[84]

2.31 While both the project maturity score progress and a project's scheduled time elapsed are indicators of a project's overall performance, the ANAO's analysis indicates that the application of a preset benchmark score for all types of projects may not depict a project's progress to FOC as accurately as a robust assessment.

2.32 Lead times and developmental risks vary considerably between the various types of procurement within the Defence Organisation, i.e. between projects classified from MOTS to Developmental. Generally, in developmental projects, a greater period of time is required for arriving at the Capability Managers' agreed requirements and specifications than for Off-The-Shelf acquisitions, and also for the production and integration of elements of the project.

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82 Australian National Audit Office, *2011–12 Major Projects Report*, Part 2, pp. 112–113.

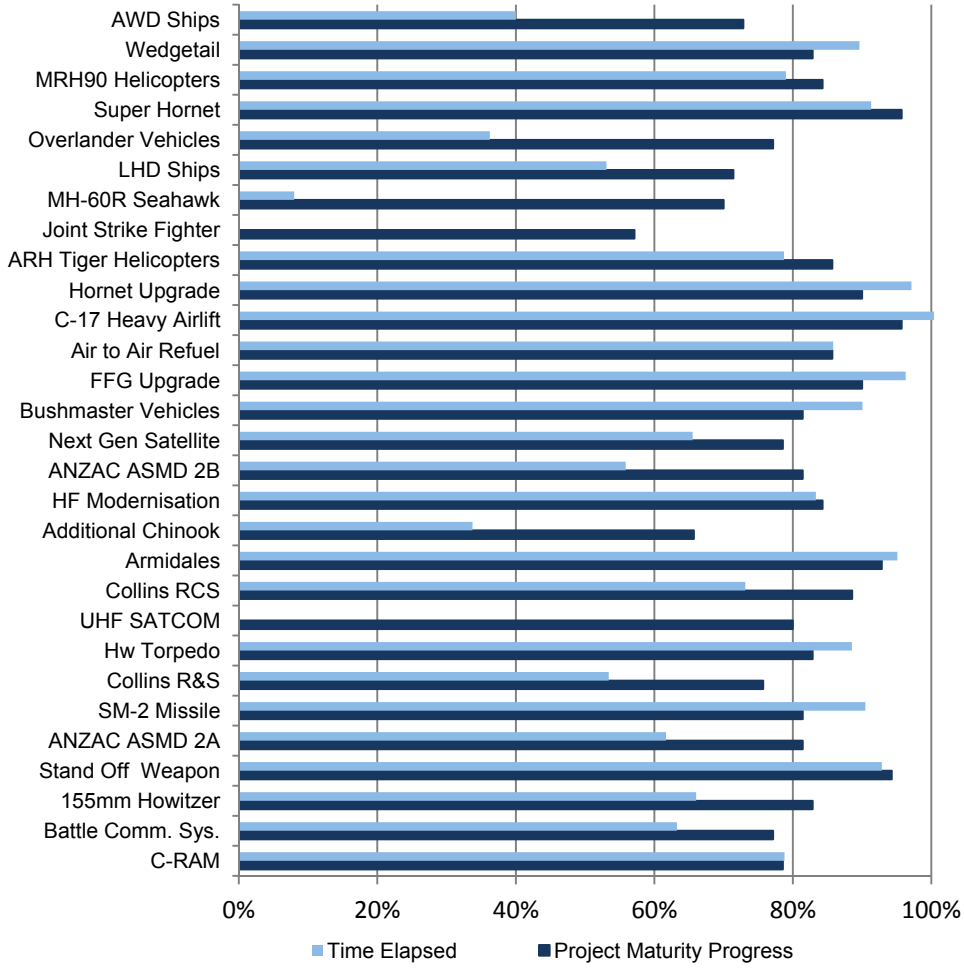
83 The DMO have advised that the project maturity score concept was not designed for a strictly linear representation of a project's progress. However, the ANAO's analysis has utilised a linear representation for comparative purposes in Figures 3, 8, and 13.

84 Source 1: Second Pass Approval is the point at which the government approves a project proceeding to the acquisition phase. Responsibility, authority and accountability for management of the acquisition phase of the materiel life cycle are vested in the DMO's line management, the focal point of which is the designated Project Manager for an acquisition project (*DMO Acquisition and Sustainment Manual, 2007,* p. 65).

Source 2: The maturity score is defined by the DMO as the maturity of a project by way of a score based on the project managers' judgement at defined milestones in its capability development and acquisition phases. Australian National Audit Office, *2011–12 Major Projects Report*, Appendix 4, p. 571. The more accurate the maturity score then the more reliable the estimate of a project's progress and the greater the confidence the project team would have in pursuing outstanding requirements.

Figure 8

Project snapshot—Time elapsed and project maturity progress (percentage)



Source: 2011–12 MPR and ANAO analysis.

Note 1: The time elapsed and maturity score data is sourced from each project's PDSS in Part 3 of this report.

Note 2: Stage 1 of the Joint Strike Fighter project is approved to acquire 14 aircraft and commence training. IOC and FOC dates will be set under the planned Stage 2 approval. UHF SATCOM does not have an FOC as one was not defined at government approval.

2.33 Figure 9, below, re-orders the projects by their procurement types, as reported by the DMO i.e. MOTS, AMOTS and Developmental[85], and presents the variance between the maturity score progress and the scheduled time elapsed for each project. This allows for a comparison between project types.

2.34 The 2012 DCP, which was endorsed by the Minister for Defence, illustrates the project maturity score benchmarks at First and Second Pass Approval. Second Pass Approval for MOTS and Developmental projects are 44 and 35, respectively.[86] The maturity scores at Second Pass Approval for the projects in the 2011–12 MPR vary and are generally inconsistent with the presentation in the DCP. For example Additional Chinook, which is a MOTS project, has a Second Pass Approval maturity score of 35, and Joint Strike Fighter which is a Developmental project, has a Second Pass Approval maturity score of 40.

2.35 Additionally, there are several projects in the MPR with differing acquisition types and the same Second Pass Approval maturity score. For example, C-17 Heavy Airlift, where the aircraft acquired were MOTS, has a Second Pass Approval maturity score of 35, and Wedgetail, which is a highly Developmental project, also has a Second Pass Approval maturity score of 35. This contradicts the expectation that MOTS acquisitions should be more mature at Second Pass Approval.

2.36 In the cases of MH-60R Seahawk, Additional Chinook and 155mm Howitzer, which the DMO classify as MOTS, a preset benchmark of 50 per cent of maturity for Second Pass Approval provides a significant variance between the reported maturity score progress and the scheduled time elapsed, which is an indication of a potentially overly optimistic assessment of project maturity. For example, the variance between the maturity score progress percentage and scheduled time elapsed percentage for MH-60R Seahawk is 62 per cent and for Additional Chinook is 32 per cent.[87]

2.37 This is similar for projects classified by the DMO as AMOTS. For example, the variance between the maturity score progress percentage and the

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85 Australian National Audit Office, *2011–12 Major Projects Report*, Part 2, Table 2.3, p. 155.

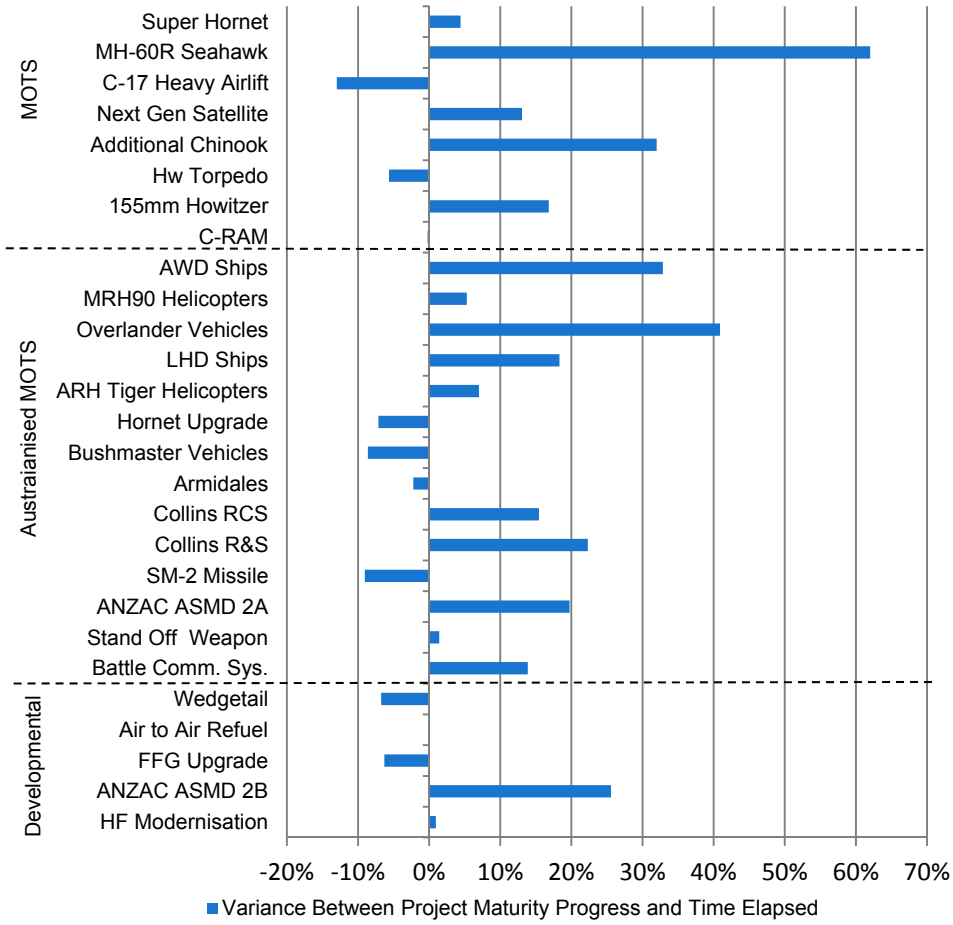
86 Department of Defence, *Defence Capability Plan 2012*, p. 4.

87 Variances for Figure 9 have been derived from the data in Figure 8, i.e. for Additional Chinook the maturity score progress percentage (66 per cent) has had the scheduled time elapsed percentage (34 per cent) subtracted from it to give a total variance of 32 per cent.

scheduled time elapsed percentage for AWD Ships is 33 per cent and for Overlander Vehicles is 41 per cent.

Figure 9

Selected project snapshot—Variance between maturity score progress and time elapsed (percentage)



Source: 2011–12 MPR and ANAO analysis.

Note 1: The time elapsed and maturity score data is sourced from each project's PDSS in Part 3 of this report.

Note 2: Stage 1 of the Joint Strike Fighter project is approved to acquire 14 aircraft and commence training. IOC and FOC dates will be set under the planned Stage 2 approval. UHF SATCOM does not have an FOC as one was not defined at government approval.

Note 3: ANZAC ASMD 2B's maturity score reflects the project's acquisition strategy and has not been updated for the movement from a one plus seven ship program to an eight ship program following Government approval to install the capability on the remaining seven ships. The maturity score is based on the progress of the lead ship.

Slippage post Second Pass Approval

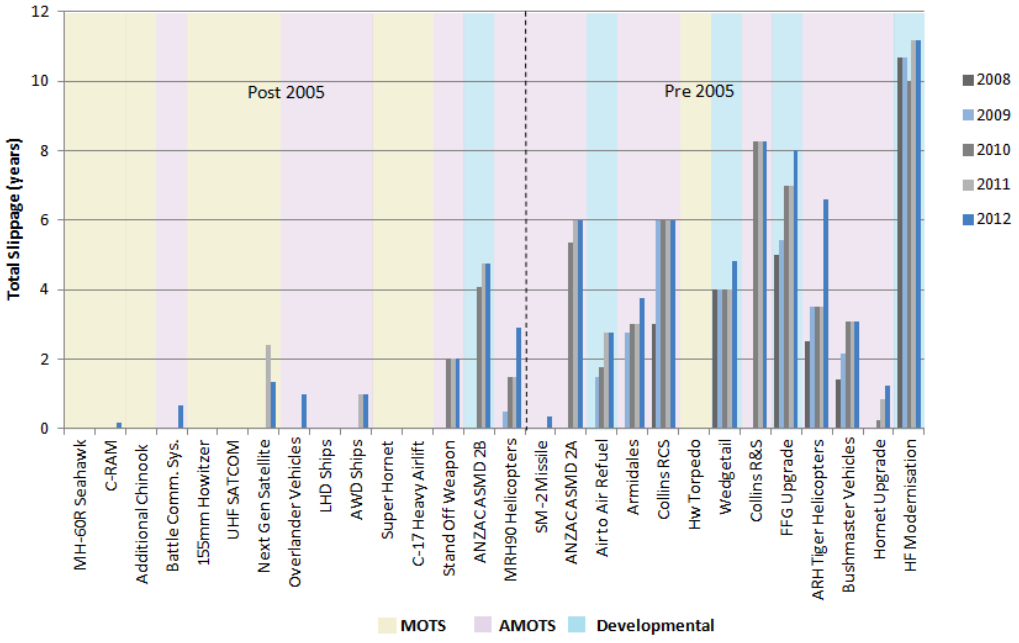
2.38 Examination of the portfolio of projects in the MPR highlighted that slippage can occur for a variety of reasons. Projects are purchased through a range of procurement options, and are subject to multiple pressures including: actions by contractors; economic conditions impacting on workforce supply and demand; and procurement decisions by other nations which may impact on downstream purchases in terms of time to delivery.

2.39 Providing forecasts on the future schedule performance of Major Projects is difficult, requiring a deep understanding of project technical elements and a realistic assessment of the capacity of the private sector to deliver in the expected timeframe. Reference to the historical performance of projects provides useful guidance which may be considered when forecasting future project performance.

2.40 The following ANAO analysis illustrates the total schedule slippage since Second Pass Approval for the current projects in the MPR, demonstrating how this key indicator of performance has altered over time. See Figure 10, below.

Figure 10

Total project slippage post Second Pass Approval



Source: 2007–08, 2008–09, 2009–10, 2010–11 and 2011–12 MPRs.

Note 1: The order of the projects is from latest to earliest approved. All project slippage relates to FOC dates except for the following:

- Next Gen Satellite – Materiel Release 4 Interim Anchoring Station (East); and
- MRH90 Helicopters – IOC (Army): refer to paragraph 1.37.

Note 2: Joint Strike Fighter is not included in this analysis as there are no defined Materiel Release or Operational Capability milestone dates. Stage 1 of the Joint Strike Fighter project is approved to acquire 14 aircraft and commence training. IOC and FOC dates will be set under the planned Stage 2 approval.

Note 3: The MRH90 Helicopters were originally categorised as a MOTS solution but have since been reassessed as more developmental than envisaged and has been reclassified as AMOTS. This advice was set out in a minute to the CEO Australian Aerospace Ltd from the General Manager Systems DMO, *MRH90 Gate Review Outcomes*, 15 April 2011.[88]

2.41 The data illustrates that older projects, which achieved Second Pass Approval prior to 2005, generally experienced the most slippage. Additionally, these projects tend to be more developmental (complex) in nature. These projects have also typically experienced schedule slippage in the past, and have continued to do so since being in the MPR.

2.42 A lack of appreciation for the complexities of developmental aspects of projects existing at Second Pass Approval, continues to be realised through slippage, as project procurement progresses.

2.43 In JCPAA Report 429, the Committee noted that for new projects in the MPR, if the project's classification is not MOTS or Commercial Off-The-Shelf (COTS), an explanation should be provided to ensure that these options were explicitly considered and eliminated for particular reasons before final procurement decisions have been made.[89] This has been incorporated in the DMO 2012–13 MPR Guidelines and will be a focus of the ANAO's review.

[88] Further information on MRH90 Helicopters can be found in ANAO Audit Reports No.48 2008–09, *Planning and Approval of Defence Major Capital Equipment Projects*, p. 84, 90 and 133, and No.52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects,* p. 86 and pp. 130–133.

[89] Joint Committee of Public Accounts and Audit, Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*, May 2012, paragraph, 3.61, p. 25.

Life to date schedule performance

2.44 Schedule delays increase the overall cost of project delivery as both the DMO and industry staffing and administrative resources are tied up for longer than planned. Schedule delay has also previously had an impact on a project's budget in real terms when project expenditure occurred at a date later than planned. However, the move in 2010–11 to provide indexation supplementation via out-turning of the project budgets to their approved FOC date will limit future budget effects of schedule delays, and will place additional pressure on the DMO in relation to funding when schedule slippage occurs.

2.45 The change in supplementation policy has meant that price indexation has emerged as a major risk or issue for some projects, and for which contingency funds may need to be drawn upon.

2.46 Figure 11, at page 74, presents information on the projects' original and 30 June 2012 forecasts for achieving FOC. The total schedule slippage for the 29 Major Projects to date is 859 months when compared to the initial prediction when first approved by government. This slippage represents a 32 per cent increase on the expected schedule since the main investment decision.[90] Across the 29 Major Projects, 18 projects have experienced schedule slippage.

2.47 The Mortimer Review recommended that the CEO DMO provide independent advice to government on the cost, schedule, risk and commercial aspects of all major capital equipment acquisitions.[91] Assuming soundly-based schedule forecasts, the reasons for schedule slippages can include technical factors such as design problems, industry capacity and capability, difficulties in integrating different systems to achieve the required capability, or emergent work associated with upgrades. In other cases, a project's ability to gain access to the platform can delay the schedule (for example, the two Collins submarine projects and Hw Torpedo).

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[90] In instances where a Major Project has multiple segments/capabilities with separate FOC dates, the ANAO has used the project's current lead/main capability FOC for calculating schedule performance. The DMO's approach is to use the final FOC date for a project listed in the 2010–11 PDSSs. These approaches, both valid, led to a small difference in the calculated percentage by which the Major Projects' total schedule has slipped for the 2011–12 MPR (ANAO – 32 per cent; DMO – 30 per cent).

[91] Mortimer, David, *Going to the Next Level: the report of the Defence Procurement and Sustainment Review, [September] 2008*, p. 27.

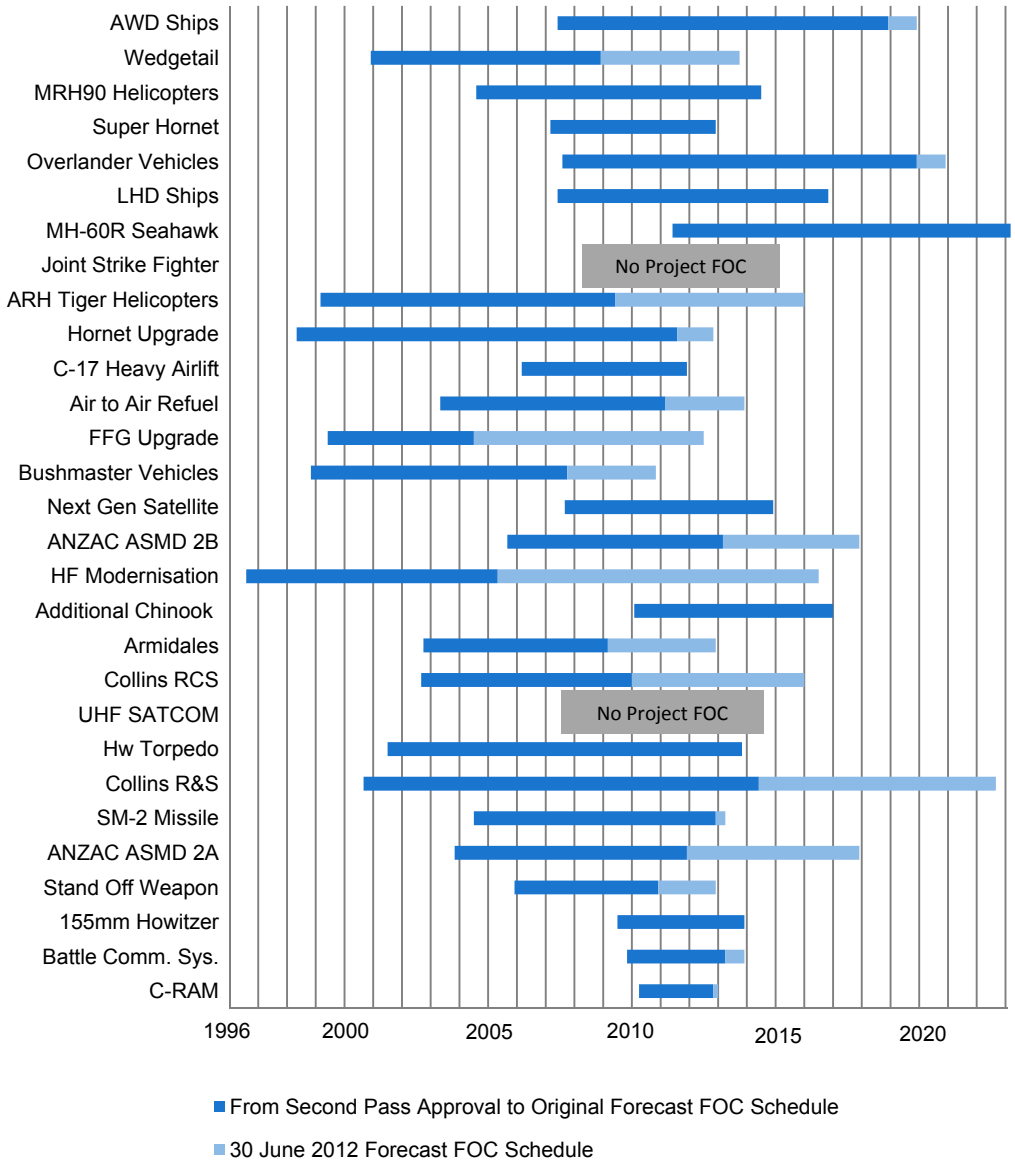
2.48 A closer examination of the reasons for schedule slippage shows the importance of initial assessments of the purchase type, i.e. MOTS, AMOTS or Developmental. Instances of misclassification in this respect have resulted in extended schedule slippage for both the Lightweight Torpedo Replacement (which is not included in the MPR) and ARH Tiger Helicopter. As noted in 2010–11, this is a known issue for MRH90 Helicopters[92] (refer to paragraph 1.37) and while in 2011–12, this project did not experience any in-year slippage for FMR and FOC, dates are currently being reviewed as a result of the re-baselining of aircraft delivery. This issue will be reviewed again in 2012–13.

2.49 Project slippage in these areas could effectively introduce or exacerbate an existing capability gap or require extension to the planned withdrawal date for those platforms being replaced, i.e. the withdrawal dates for the Sea King helicopter and Black Hawk helicopter fleets included consideration of the introduction of replacement capability.

[92] Further information on MRH90 Helicopters can be found in ANAO Audit Reports No.48 2008–09, *Planning and Approval of Defence Major Capital Equipment Projects*, p. 84, 90 and 133, and No.52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects,* p. 86 and pp. 130–133.

Figure 11

Projects' original and 30 June 2012 forecast schedule for FOC



Source: 2011–12 MPR.

Note 1: Hornet Upgrade FOC date relates to Phase 2.3.

Note 2: Bushmaster Vehicles FOC date relates to production period 1. The FOC date for production period 4 is December 2013.

In-year schedule performance

2.50 In 2011–12, there was a total of 99 months slippage in the forecast achievement of FOC for the 27 projects that were also included in the 2010–11 MPR. This represents a four per cent increase in the scheduled timeframe for this group of projects. In 2011–12, C–17 Heavy Airlift achieved FOC in line with its original schedule. This project was classified as MOTS, already in production with proven capability.

2.51 Figure 12, below, shows that the in-year schedule slippage involved the following projects:

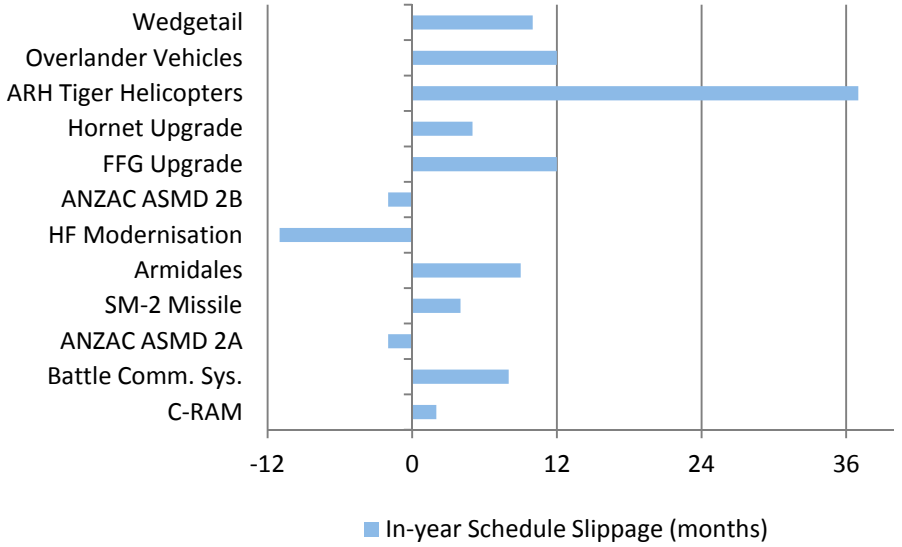
- Wedgetail (delays in the delivery of spares and completion of the radar remediation program and crew training);
- Overlander Vehicles (delays due to extended contract negotiations for Phase 3B (Medium/Heavy Capability));
- ARH Tiger Helicopters (delays are a result of the reduction in flying rate of effort experienced by the ARH fleet, as well as a requirement to conduct amphibious operations from LHD ships);
- Hornet Upgrade (the project is waiting on the completion of an Airworthiness Board for Supplemental Type Certification and Service Board Release by the Royal Australian Air Force);
- FFG Upgrade (while the Chief of Navy endorsed Operational Release of the Upgraded FFG capability, it excluded underwater warfare systems and imposed an operational limitation on Electronic Support and some elements of Air Area Defence. This is currently under review);
- Armidales (the final two vessels were awaiting release by Navy at 30 June 2012);
- SM-2 Missile (delays due to a revised ship availability program);
- Battle Comm. Sys. (the FOC date was changed to align with the Army Brigade Rotation Cycle); and
- C-RAM (the FOC date was changed to reflect revised delivery dates of the last Giraffe Agile Multi Beam).

2.52 In contrast, the following projects' forecast FOC schedule decreased:

- ANZAC ASMD 2B (the FOC date changed to align with approval by government in November 2011 to proceed with ASMD upgrade of ships 2-8);
- HF Modernisation (as a result of the May 2012 Budget decisions, no further mobile platform upgrades will be undertaken under this project; this reduction in scope has brought forward the FOC date); and
- ANZAC ASMD 2A (the FOC date changed to align with the updated ANZAC ASMD 2B milestone dates approved by government in November 2011).

Figure 12

In-year (2011–12) schedule changes to achieving FOC (months increase/ decrease in schedule)



Source: 2011–12 MPR.

Note 1: The ANAO review indicates that 15 of the 27 MPR projects with FOC dates did not record changes to the relevant FOC dates during the year.

Note 2: Stage 1 of the Joint Strike Fighter project is approved to acquire 14 aircraft and commence training. IOC and FOC dates will be set under the planned Stage 2 approval. UHF SATCOM does not have an FOC as one was not defined at government approval.

Longitudinal schedule performance

2.53 Tables 5, 6, 7 and 8 show the schedule slippage of those Major Projects included in the 2007–08, 2008–09, 2009–10, and 2010–11 MPRs across the five reports up to and including the 2011–12 MPR. While the information in these tables link to Table 2, at page 22, they are included to present further detail.

2.54 Table 5, below, tracks the schedule slippage of the initial nine projects[93] included in the 2007–08 MPR across the subsequent reports. The table shows that the total schedule slippage for the initial nine projects in 2007–08 was 308 months and that the total schedule slippage for the initial nine projects in 2011–12 was 536 months (an increase of 228 months over four years).

2.55 Table 6, below, tracks the schedule slippage of the 14 projects[94] included in the 2008–09 MPR across the subsequent reports. The table shows that the total schedule slippage reported in 2008–09 was 378 months and that the total schedule slippage for the 14 projects in 2011–12 was 581 months (an increase of 203 months over three years).

2.56 Table 7, at page 79, tracks the slippage progress of the 21 projects[95] included in the 2009–10 MPR across the subsequent reports. The table shows that the total schedule slippage reported in 2009–10 was 688 months and that the total schedule slippage for the 21 projects in 2011–12 was 845 months (an increase of 157 months over two years).

2.57 Table 8, at page 79, tracks the slippage of 27 projects[96] included in the 2010–11 MPR across the subsequent reports. The table shows that the total schedule slippage reported in the 2010–11 MPR was 760 months and that the

[93] The nine projects reported in the 2007–08 MPR were Wedgetail, Armidales, HF Modernisation, Bushmaster Vehicles, Hornet Upgrade, Collins RCS, ARH Tiger Helicopters, C-17 Heavy Airlift and FFG Upgrade.

[94] There were 15 projects reported in the 2008–09 MPR, the nine projects reported in the 2007–08 MPR, plus AWD Ships, Super Hornet, MRH90 Helicopters, LHD Ships, Air to Air Refuel and Hornet Refurb. In 2011–12, Hornet Refurb was removed from the PDSSs, therefore it is not included in the analysis.

[95] There were 22 projects reported in the 2009–10 MPR, the 15 projects reported in the 2008–09 MPR, plus Overlander Vehicles, Next Gen Satellite, ANZAC ASMD 2B, Hw Torpedo, Collins R&S, Stand Off Weapon and ANZAC ASMD 2A. In 2011–12, Hornet Refurb was removed from the PDSSs, therefore it is not included in the analysis.

[96] There were 28 projects reported in the 2010–11 MPR, the 22 projects reported in the 2009–10 MPR, plus Joint Strike Fighter, SM-2 Missile, Additional Chinook, UHF SATCOM, 155mm Howitzer and Battle Comm. Sys. In 2011–12, Hornet Refurb was removed from the PDSSs, therefore it is not included in the analysis.

total schedule slippage for the 27 projects in 2011–12 was 857 months (an increase of 97 months).

2.58 The tables show that 63 per cent (536 months) of the total schedule slippage across the Major Projects covered in the 2011–12 MPR (857 months) is made up of the schedule slippage from the initial nine projects reported in the 2007–08 MPR.

Table 5

2007–08 MPR projects: Schedule slippage across years

	2007–08 MPR	2008–09 MPR	2009–10 MPR	2010–11 MPR	2011–12 MPR
Number of Projects	9	9	9	9	9
Schedule Slippage (Total)	308 months (37 per cent)	360 months (43 per cent)	431 months (51 per cent)	463 months (55 per cent)	536 months (64 per cent)
Average Schedule Slippage per Project	39 months	45 months	54 months	58 months	67 months
Schedule Slippage (In–year)	-	52 months (4 per cent)	71 months (5 per cent)	32 months (2 per cent)	73 months (5 per cent)

Source: 2011–12 MPR and ANAO analysis.

Table 6

2008–09 MPR projects: Schedule slippage across years

	2008–09 MPR	2009–10 MPR	2010–11 MPR	2011–12 MPR
Number of Projects[1]	14	14	14	14
Schedule Slippage (Total)	378 months (28 per cent)	452 months (33 per cent)	508 months (37 per cent)	581 months (42 per cent)
Average Schedule Slippage per Project	27 months	32 months	36 months	42 months
Schedule Slippage (In–year)	-	74 months (5 per cent)	56 months (4 per cent)	73 months (5 per cent)

Source: 2011–12 MPR and ANAO analysis.

Note 1: In 2008–09 there were 15 projects. However, in 2011–12 Hornet Refurb was removed from the PDSSs, therefore it is not included in the analysis.

Table 7

2009–10 MPR projects: Schedule slippage across years

	2009–10 MPR	2010–11 MPR	2011–12 MPR
Number of Projects[1]	21	21	21
Schedule Slippage (Total)	688 months (31 per cent)	760 months (35 per cent)	845 months (39 per cent)
Average Schedule Slippage per Project[2]	33 months	36 months	40 months
Schedule Slippage (In–year)	-	72 months (3 per cent)	85 months (4 per cent)

Source: 2011–12 MPR and ANAO analysis.

Note 1: In 2009–10 there were 22 projects. However, in 2011–12 Hornet Refurb was removed from the PDSSs, therefore it is not included in the analysis.

Note 2: The 2009–10 and 2010–11 figures do not align with what was reported in the 2010–11 MPR due to a correction which has been made. Joint Strike Fighter and UHF SATCOM were incorrectly included in the calculation and this has now been corrected.

Table 8

2010–11 MPR projects: Schedule slippage across years

	2010–11 MPR	2011–12 MPR
Number of Projects[1]	27	27
Schedule Slippage (Total)	760 months (35 per cent)	857 months[2] (35 per cent)
Average Schedule Slippage per Project	30 months	34 months
Schedule Slippage (In–year)	-	97 months (4 per cent)

Note 1: In 2010–11 there were 28 projects. However, in 2011–12 Hornet Refurb was removed from the PDSSs, therefore it is not included in the analysis.

Note 2: The total schedule slippage in 2011–12 across the 29 projects is 859 months as per Table 9. This includes a two month schedule delay for C-RAM, which is not included above as it is new to the MPR in 2011–12 and the date of slippage unknown.

2.59 Further disaggregation according to a project's Second Pass Approval date, shown in Table 9, below, shows that 87 per cent of the total schedule slippage across the Major Projects covered in the 2011–12 MPR is made up of projects approved prior to the DMO's demerger from the Department of Defence, in July 2005.

Table 9

Project slippage: Project's approved pre and post DMO demerger

Project	No. of months between Approval and Original FOC date	No. of months between Approval and 30/6/12 FOC date	No. of months slippage between Original FOC and 30/6/12 FOC date
Projects Approved pre July 2005			
Wedgetail	96	154	58
Joint Strike Fighter	N/A	N/A	N/A
ARH Tiger Helicopters	123	202	79
Hornet Upgrade	159	174	15
Air to Air Refuel	94	127	33
FFG Upgrade	61	162	96[1]
Bushmaster Vehicles	107	144	37
HF Modernisation	105	228	134[2]
SM-2 Missile	101	105	4
Armidales	77	122	45
Collins RCS	88	160	72[2]
Hw Torpedo	148	148	0
Collins R&S	165	264	99
ANZAC ASMD 2A	97	167	72
Sub Total - Projects Approved pre July 2005	**1 421**	**2 157**	**744**
Percentage of Total - Projects Approved pre July 2005	**53%**	**61%**	**87%**
Projects Approved post July 2005			
AWD Ships	138	150	12
MRH90 Helicopters	119	119	0
Super Hornet	69	69	0
Overlander Vehicles	148	160	12
LHD Ships	113	113	0
MH-60R Seahawk	150	150	0
C-17 Heavy Airlift	69	69	0
Next Gen Satellite	87	87	0
UHF SATCOM	N/A	N/A	N/A
Additional Chinook	83	83	0
ANZAC ASMD 2B	90	145	57[2]
Stand Off Weapon	60	84	24
155mm Howitzer	53	53	0
Battle Comm. Sys.	41	49	8
C-RAM	31	33	2
Sub Total – Projects Approved post July 2005	**1 251**	**1 364**	**115**
Percentage of Total – Projects Approved post July 2005	**47%**	**39%**	**13%**
Total – All Projects With Slippage	**2 672**	**3 521**	**859**

Source: 2011–12 MPR and ANAO analysis.

Note 1: This figure does not add as new FOC dates were introduced in 2010–11 which were later than the original FOC date. This was not caused by project issues.

Note 2: These figures do not add precisely due to the exclusion of schedule reductions over the life of the project.

Capability performance

Project snapshot—Key capabilities expected to be delivered and project maturity progress

2.60 The ADF defines capability as the capacity or ability to achieve a particular operational effect.[97] An operational effect is achieved by combining the eight Fundamental Inputs to Capability (FIC): personnel; organisation; collective training; major systems; supplies; facilities and training areas; support; and command and management.[98]

2.61 In acquiring Defence platforms and systems, a range of documentation (including capability definition documents, operational concept documents, function and performance specification, and test concept documents) is developed and sets out the detailed requirements/performance attributes to be achieved. In the case of an aircraft, for example, this would include elements such as its range and speed, handling characteristics, self protection abilities, requirements for runway length and other ground support, civil and military communications and guidance systems, maximum takeoff weights, cargo capacity, maintenance requirements and compliance with military and civil certification regulations and requirements.

2.62 Depending on the nature of the information, it can be classified for national security reasons and therefore may not be publicly available.

2.63 The fourth snapshot, Figure 13, at page 83, sets out the DMO's assessment of the likelihood of delivering all of the key capability expected to be delivered and the project maturity score progress.[99] For 28 of the 29 projects, the DMO's assessment of the likelihood of delivering capability is against the

[97] Source 1: Department of Defence, *Defence Capability Development Handbook 2011*, p. 2.

Source 2: Defence Instructions (General) OPS 45–2, *Capability Acceptance into Operational Service*, 9 November 2012, paragraph 1, p.1.

[98] Defence Instructions (General) OPS 45–2, *Capability Acceptance into Operational Service*, 9 November 2012, paragraph 1.

[99] Source 1: As the DMO's assessment of the likelihood of delivering key capabilities involves high levels of uncertainty which may cause actual outcomes to differ materially from that stated in the PDSSs, this data and the DMO's assessment is outside the scope of the ANAO's assurance review for the 2011–12 MPR.

Source 2: The DMO have advised that the project maturity score concept was not designed for a strictly linear representation of a project's progress. However, the ANAO's analysis has utilised a linear representation for comparative purposes in Figures 3, 8, and 13.

Materiel Release Milestones (MRMs)[100] and Completion Criteria specified in each project's MAA. The exception is Wedgetail, where the assessment has been against the Supplies section of the MAA, which lists the equipment to be delivered. The project maturity score is based on the project manager's judgement at defined milestones in the project's capability development and acquisition phases.[101]

2.64 The complexity and type of acquisition (MOTS, AMOTS or Developmental) is a significant factor affecting the likelihood of delivering all key capabilities; the risk is appreciably higher for more developmental projects. The DMO's assessment of the likelihood of any project delivering all the key capability requirements should become better informed as a project matures along its capability development and acquisition lifecycle.

2.65 The DMO's key capability measures should be interpreted with some caution due to their lack of rigour as a data system and the high level of uncertainty in forecasting outcomes.

2.66 Overall, the DMO's assessment is that 27 of the 29 projects with key capability data in this year's MPR will deliver all their key capability requirements. The projects that are not expected to deliver all their key capability requirements are Wedgetail and MRH90 Helicopters.

2.67 In the 2010–11 MPR, 155mm Howitzer was reported as not expected to deliver all of its key capability requirements. However, following the decision to progress the acquisition of the Course Correcting Fuze capability by December 2012, it is now expected to meet 100 per cent of its capability requirements.[102]

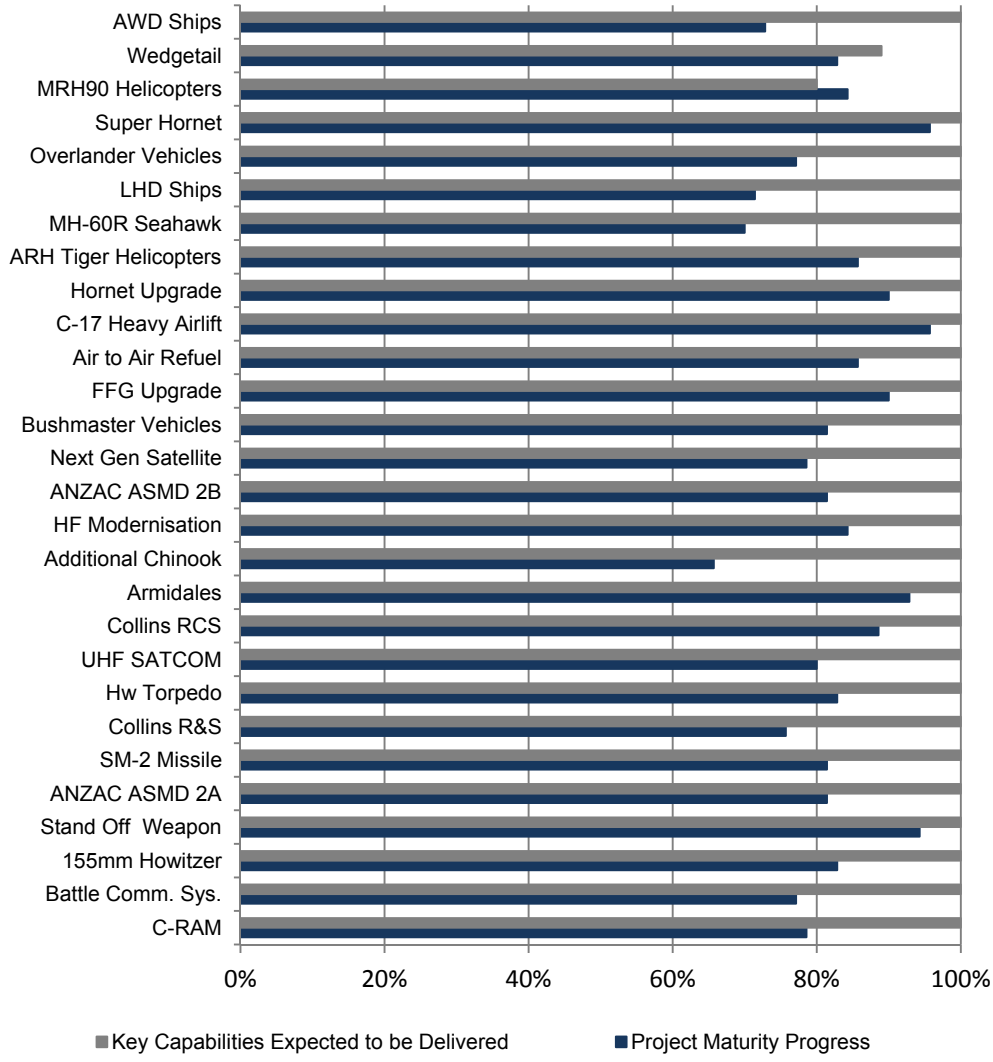
[100] A number of MRMs at 30 June 2012 include milestones relating to schedule, which are not strictly capability measures within the DMO framework.

[101] This score can then be compared against an ideal or benchmark score for that milestone to indicate the project's relative performance.

[102] Australian National Audit Office, *2011–12 Major Projects Report*, Part 3, Project Data Summary Sheets.

Figure 13

Project snapshot—Key capabilities expected to be delivered and project maturity progress (percentage)



Source: 2011–12 MPR and ANAO analysis.

Note 1: Wedgetail—the system's radar performance is not expected to meet the originally required specification at final delivery.

Note 2: MRH90 Helicopters—the delivery of conforming supplies is highly unlikely to be achieved for the first maritime and land operational capabilities.

Note 3: This analysis excludes Joint Strike Fighter as a new project baseline is being defined and the associated MAA is being established and executed by early 2013.

2.68 During 2010–11, 26 of the 28 Major Projects transitioned to a new MAA.[103] One change introduced by the new MAA was the inclusion of MRMs and Completion Criteria (replacing Measures of Effectiveness (MOEs)) which are designed to define at a strategic level the key elements required to achieve Initial Materiel Release (IMR) and Final Materiel Release (FMR).[104]

2.69 In general, the MRMs and Completion Criteria focus on the achievement of certain technical, regulatory or operational requirements. Where key requirements are not achieved, this could be expected to have a significant effect on a system's likely suitability for acceptance into operational service.

2.70 In the 2009–10 MPR, the ANAO observed that there was considerable diversity across the projects in the number, level of specification and focus for MOEs. This observation is maintained for the MRMs and Completion Criteria. The ANAO continues to observe that there is not a clear underlying consistency in the identification and articulation of the MRMs and Completion Criteria in the MAAs. For example, AWD Ships currently has four MRMs (IMR—Ship 1, MR 2—Ship 2, MR 3—Ship 3 and FMR), while 155mm Howitzer reports on 23 MRMs.

2.71 The MRMs and Completion Criteria are assessed using traffic light indicators by the DMO's project management, and reported monthly within the DMO and the Defence Organisation. The June 2012 traffic light assessment is represented in the PDSSs as Measures of Materiel Capability Performance.

2.72 As the Measures of Materiel Capability Performance's assessment concerns forecasting future achievements, it has been excluded from the scope of the ANAO's formal review.[105] However, the ANAO has been provided with

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[103] The MAA for Bushmaster Vehicles was signed during July 2011 and August 2011. Hornet Refurb was not required to transition to the new MAA due to its expected completion date.

[104] Source 1: IMR is achieved on the delivery of the DMO Acquisition Project supplies that have been identified within the MAA as required to support the achievement of Initial Operational Release (IOR). FMR is achieved on the delivery of all the DMO Acquisition Project supplies specified within the MAA to support the achievement of Final Operational Capability (FOC). Defence Materiel Instruction, DMI (PROJ) 11-0-001, *Management of DMO Acquisition Project Schedules 2010*, Table 1.

Source 2: For Wedgetail, as per the 2010–11 MPR, the DMO have used Section 4 of the MAA (Supplies) to assess Section 5 (Measures of Materiel Capability Performance) of the project's PDSS, instead of the MRMs and Completion Criteria.

[105] See paragraph 1.13 for PDSS items out of scope for the ANAO's assurance review.

data from the DMO's reporting systems in order to examine the accuracy of the disclosure in the PDSSs.

2.73 Due to national security considerations, only the overall status from each project's assessment of the likelihood of delivering the required materiel capability is disclosed in the 2011–12 MPR and earlier reports. Figures 14 and 15 present the DMO's assessment of the percentage of materiel capability that:

- has a high level of confidence will be delivered (green);
- are under threat but still considered manageable (amber); and
- at this stage are unlikely to be met (red).

2.74 For example, Figure 15, at page 88, shows the assessment for FFG Upgrade as at 30 June 2012, as having a high level of confidence in delivering 80 per cent of the materiel capability, while 20 per cent of the materiel capability is under threat but still considered manageable. This is a reduction in the expected capability to be delivered from the 2010–11 MPR.

Capability performance to date of MPR projects

2.75 A multi-year comparison of capability performance needs to be treated with caution due to year-to-year changes in the basis of MOEs or Materiel Capability milestones previously reported and the move to reporting Measures of Materiel Capability Performance.

2.76 This fifth MPR continues to examine the broad trends in the DMO's assessment of the likelihood of projects delivering the required capabilities over time. This comparison can be achieved by examining this year's PDSSs and data reported in previous MPRs.

2.77 Figure 14, below, examines the DMO's assessment of the likely delivery of the materiel capability for 28 of the 29 Major Projects reported in the 2011–12 MPR[106]; the 28 Major Projects in the 2010–11 MPR; the MOEs for 21 of the 22 Major Projects in the 2009–10 MPR; 14 of the 15 Major Projects in the 2008–09 MPR[107]; and the nine Major Projects in the 2007–08 MPR.

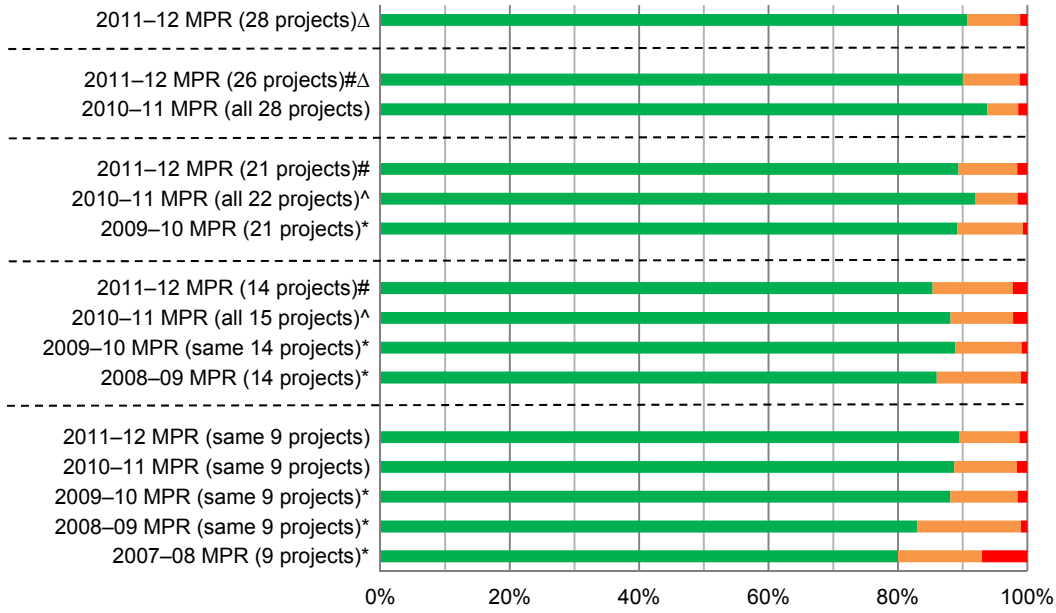
[106] This analysis excludes Joint Strike Fighter as a new project baseline is being defined and the associated MAA is being established and executed by early 2013.

[107] The DMO advised that the Super Hornet did not have endorsed MOEs because of its MOTS nature. The Super Hornet capability does have Measures of Materiel Capability Performance.

2.78 While in the 2010–11 MPR there was greater confidence in the level of materiel capability that will be delivered, shown by a growing percentage of measures assessed as green, in 2011–12 that has decreased. Also in 2011–12, there is a higher percentage of capability that is under threat but still considered manageable, shown by a growing percentage in amber. Since the 2008–09 MPR there are also a growing number of measures assessed as unlikely to be met.

Figure 14

Projects' measures of materiel capability performance—The DMO level of confidence in their delivery in 2008, 2009, 2010, 2011 and 2012 (percentages: Green, Amber and Red)



Sources: 2007–08, 2008–09, 2009–10, 2010–11 and 2011–12 MPRs.

Note 1: Measures of Materiel Capability Performance concern the forecasting of future achievements and are outside the scope of ANAO's review.

Note 2: It should be noted that what are defined as a project's MOEs or Measures of Materiel Capability can change from year to year. Therefore, any comparison of an individual or a group of projects' MOEs or Measures of Materiel Capability data across years should be treated with caution as this may not involve comparing 'like with like'.

Note 3: * The ANAO did not examine the accuracy of the recording of this data in previous MPRs.

Note 4: ^ Super Hornet did not have MOEs but does have Measures of Materiel Capability Performance in the latest MAA.

Note 5: # Hornet Refurb was removed from the PDSSs in 2011–12.

Note 6: Δ Joint Strike Fighter is excluded from this analysis as a new project baseline is being defined and the associated MAA is being established and executed by early 2013.

Note 7: The key capability assessment for Wedgetail has been against the Supplies section of the MAA, which lists the equipment to be delivered.

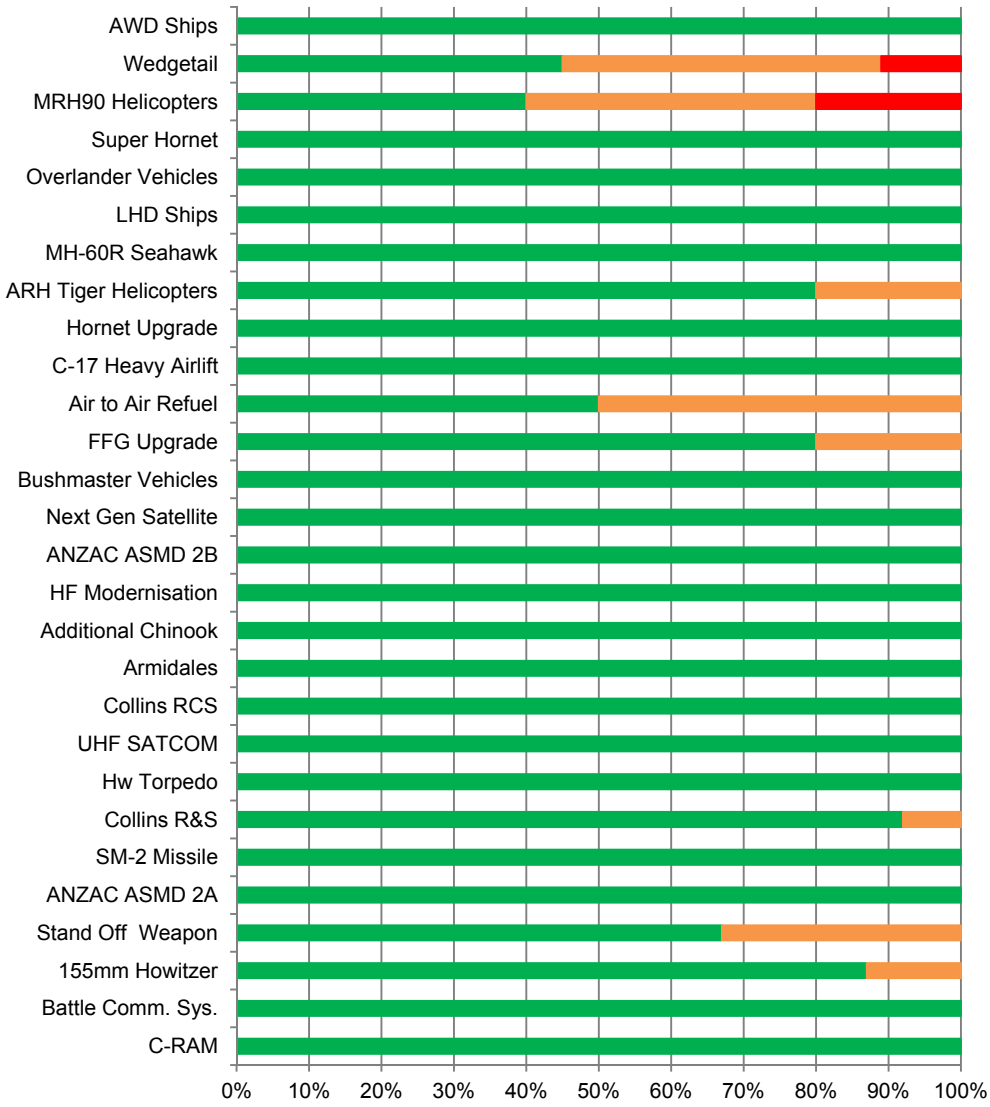
In-year capability performance

2.79 Figure 15, below, highlights that there are eight Major Projects experiencing challenges in delivering elements of their system's planned capability. These projects are:

- Wedgetail—the performance of the phased array radar, which is central to the surveillance capability, will not meet the specification at final delivery. A radar remediation program is providing the basis for further work on improving the system's performance. Other current technical challenges involve the development of the communications, electronic support measures, electronic warfare self-protection and ground support systems.
- MRH90 Helicopters—the main contractor was unable to deliver conforming supplies, which resulted in the first maritime and land operational capabilities not being achieved by the scheduled date.
- ARH Tiger Helicopters—the delivery of long lead repairable items and support and test equipment is currently forecast to occur after the FMR date.
- Air to Air Refuel—there is a risk that the project will not provide all the materiel capability required due to the acceptance of aircraft in an initial configuration. There is also a risk that the Aerial Refuelling Boom System's non-conformances and improvements will not be remediated.
- FFG Upgrade—there are Navy acceptance issues and support requirements relating to the Underwater Warfare System.
- Collins R&S—the Special Forces Exit and Re-entry safety modification to one vessel has been delayed to reduce the impact on the maintenance schedule. This modification will be installed during the next maintenance availability.
- Stand Off Weapon—final missile deliveries for FMR/FOC are at risk due to ongoing fuze issues.
- 155mm Howitzer—the Course Correcting Fuze capability will provide Army with improved ammunition precision to minimise collateral damage, avoid incidents of friendly fire and increase lethality against high value targets. However, the acquisition of the Course Correcting Fuze capability through the Foreign Military Sales (FMS) procurement process remains an issue.

Figure 15

Projects' measures of materiel capability performance—The DMO level of confidence in their delivery as at June 2012 (percentages: Green, Amber and Red)



Source: 2011–12 MPR.

Note 1: The Measures of Capability Performance concern forecasting future achievements and are outside the scope of ANAO's review.

Note 2: Joint Strike Fighter is excluded from this analysis as a new project baseline is being defined and the associated MAA is being established and executed by early 2013.

Note 3: The key capability assessment for Wedgetail has been against the Supplies section of the MAA, which lists the equipment to be delivered.

3. Governance and Business Processes

Introduction

3.1 Major Defence equipment acquisition projects (Major Projects) are often large, technically complex, high-cost procurement activities, characterised by risk and long timeframes between concept, delivery and acceptance into service. These characteristics pose significant challenges to the effective governance of these projects and highlight the importance of applying a robust governance framework to them. Such a framework has the capacity to enhance transparency and accountability, and support consistent assessment of the progress of Major Projects across the whole portfolio of projects.

3.2 The ANAO reviewed key governance aspects including: Gate Review Boards; management of Projects of Concern; and Early Indicators and Warnings. Additionally, the ANAO's review encompassed the application of business systems and processes; contingency budgets; the use of Earned Value Management Systems (EVMSs); and skills development, to gain a greater understanding of the DMO's business to assist in the development of the most efficient and effective review process and to provide evidence for the review conclusion. These matters are discussed in the following paragraphs.

3.3 Joint Project Directives (JPDs) have been introduced into the Defence capital equipment procurement process to identify the scope and limits of acquisition projects and who is responsible for the major components of the work. Therefore, they are important to sound governance and accountability in Defence acquisition projects (refer to paragraphs 3.32 and 3.33).

3.4 Additionally, and similar to previous years, the inconsistent use of business systems across the DMO remains an issue for providing reliability of information. The ANAO's assessment is discussed further in paragraphs 3.35 to 3.41.

Governance framework for Major Projects

3.5 The ANAO again engaged with the DMO on developments with risk management to continue to develop its understanding of the DMO's risk management systems and processes (refer to paragraphs 1.45 to 1.59).

3.6 In 2012–13, this will again be a focus of the ANAO's review in addition to the developments following greater use of JPDs as part of the new arrangements to enhance accountability highlighted above.

Gate Review Boards

3.7 Gate Reviews involve a periodic assessment of a project at key milestones by a DMO-appointed Gate Review Board. Their purpose is to provide a mechanism whereby, particularly in respect of critical 'gates'[108], the Chief Executive Officer (CEO) of the DMO is provided with assurance that all the identified risks for a project (cost, schedule, technical/capability) are manageable, and that the project is ready to proceed to the next stage.

3.8 The DMO discussed its intention to implement Gate Reviews publicly for the first time in July 2008[109], and held its first two Gate Reviews in August and September of that year (during the period of the Mortimer Review).[110] No further Gate Reviews were held until September 2009[111], and the DMO only approved the related administrative policy in December 2009.[112]

3.9 Following the initial limited implementation of the Mortimer recommendation, where Gate Reviews were largely ad hoc, the decision was made to strengthen the process and expand it to all Major Projects managed by the DMO, with each to undergo at least one Gate Review per year.[113] This expansion followed a directive from government through the establishment of an Independent Project Performance Office (IPPO)[114], whose responsibilities also included overseeing the remediation of all Projects of Concern and

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108 A gate is a key project decision point or milestone.

109 Joint Standing Committee on Foreign Affairs, Defence and Trade, *Review of the Defence Annual Report 2006-07*, Committee Hansard, 10 July 2008, p.10.

110 Mortimer, David, *Going to the Next Level: the report of the Defence Procurement and Sustainment Review, [September] 2008*, pp. 35–36. This report is generally known as 'the Mortimer Review'.

111 ANAO Audit Report No.52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects,* paragraph 5, p. 14.

112 Defence Materiel Instruction (Acquisition), DMI (A&S) 14-0-003, *Gate Reviews for DMO Acquisition Projects*, 16 December 2009.

113 Minister for Defence, the Hon. Stephen Smith MP, and the Minister for Defence Materiel, the Hon. Jason Clare MP, *Strategic Reform Program*, 6 May 2011.

114 Minister for Defence, the Hon. Stephen Smith MP, and the Minister for Defence Materiel, the Hon. Jason Clare MP, *Independent Project Performance Office to oversee major Defence projects established*, 29 June 2011.

implementing the new Early Indicator and Warnings system designed to help identify and correct potential problems with projects.[115]

3.10 After slow development of the Gate Review policy and implementation, Gate Reviews have emerged as the DMO's most prominent internal project assurance activity. The ANAO Audit Report No.52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, 26 June 2012, examined the effectiveness of the DMO's implementation of its Gate Review process for Major Projects. The audit concluded that 'DMO has improved the effectiveness with which it implements its Gate Review program since establishing its Independent Project Performance Office (IPPO) in July 2011, and centralising the management of all Gate Reviews within IPPO'.[116] However, the audit also concluded that there remain opportunities for further improvement and rigour.

3.11 Gate Review Boards normally comprise DMO senior line management, relevant people with key skill sets from other parts of the DMO, and up to two external independent members with extensive Defence or commercial experience. For Acquisition Category[117] (ACAT) I and II projects and selected ACAT III and IV projects, the IPPO also appoints a Senior Project Analyst to conduct an independent analysis of preparedness and identify key issues to bring to the Board's attention.

3.12 Accountability for the conduct and findings of a Gate Review rests with the Chair who, on completion of the review and on advice from the Board, will make a formal recommendation to the relevant DMO executive as to the fitness of the project to proceed to the next stage in the project life cycle. Gate Review Board clearance may be conditional on the completion of a number of actions noted during the Board meeting.

3.13 The DMO division responsible for the project which was reviewed has responsibility for any follow-up action. The ANAO Audit Report No.52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects*, 26 June 2012,

[115] Minister for Defence, the Hon. Stephen Smith MP, and the Minister for Defence Materiel, the Hon. Jason Clare MP, *Strategic Reform Program*, 6 May 2011.

[116] ANAO Audit Report No.52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects,* pp.15–16.

[117] The DMO categorises its acquisition projects into one of four Acquisition Categories (ACATs) to differentiate between the complexity of business undertakings, focus management attention, provide a basis for professionalising its workforce and facilitate strategic workforce planning. Australian National Audit Office, *2011–12 Major Projects Report*, Appendix 3, p. 570.

observed that there had not 'yet been an adequate formal mechanism for verifying that this action is complete—ensuring that the follow-up has taken place'.[118]

3.14 The DMO agreed to the ANAO's recommendation that it ensures that a control mechanism is deployed to monitor the status and completion of actions recommended by Gate Review Boards and agreed by the relevant executive. The DMO has advised that the IPPO has begun conducting an audit of all project actions following Gate Reviews, and that processes have been established in the DMO Divisions to track the closure of Gate Review actions.

3.15 Gate Reviews are mandatory for Major Projects at four specified gates and optional at other gates, depending on the outcomes of the project risk assessment. A project is not permitted to proceed to the next stage of its life cycle until it is cleared by the Gate Review Board. Mandatory gates are: First Pass consideration; Second Pass consideration; Contract Solicitation; and Contract Negotiation.[119] The DMO also requires a Gate Review to be held where the risks known about the project merit such a review, for example, where new information about a project triggers an early warning of a difficulty arising. However, the DMO intends all Major Projects to undergo a Gate Review annually with approximately 140 Major Projects scheduled to undertake a Gate Review by the end of 2012.[120] Up to October 2012, 27 Gate Reviews had been conducted on 23 of the projects in the 2011–12 MPR[121] (2010–11: 10 MPR projects were subjected to Gate Reviews).

3.16 The ANAO assessed the material considered in the Gate Reviews and the outcomes of each review conducted, to gain assurance that the information presented was consistent, in all material respects, with the information in the 2011–12 MPR. This assessment has been significant in previous MPRs, for example, where part of the 2010–11 assessment revealed the developmental nature of the MRH90 helicopter system, and therefore the misclassification of

[118] ANAO Audit Report No.52 2011–12, *Gate Reviews for Defence Capital Acquisition Projects,* p. 90.

[119] The decision points and their mandatory status have changed over time. These are detailed in the most recent Gate Review instruction, Defence Materiel Instruction, DMI (EXEC) 00-0-009 Version 1.0 *Gate Reviews for DMO Projects*, 3 May 2012, Annex A.

[120] Department of Defence, *Defence Annual Report 2011–2012*, Chapter 10 DMO Overview, p. 154.

[121] This includes Overlander (three Gate Reviews), LHD Ships (two Gate Reviews) and MH-60R Seahawk (two Gate Reviews). Four projects have Gate Reviews scheduled for later this year. Armidales and Collins R&S are the only projects not expected to undergo Gate Reviews in 2012.

the type of purchase as Australianised MOTS (AMOTS). Additionally, the Gate Review conducted during September and October 2011 recommended the project be added to the Projects of Concern list[122] and the project was added to the list by the Minister for Defence, as noted in the Statement by the CEO DMO in the 2010–11 MPR.[123]

3.17 Notably, reflecting the ongoing management focus on this project by the DMO across a range of significant matters, the project's financial assurance statement states: 'DMO is conducting negotiations with the prime contractor to settle a number of commercial, technical and scheduling issues, including compensation for late deliveries. Following the finalisation of these negotiations DMO will undertake a review of the project budget, including levels of contingency' (refer to paragraph 1.37).

3.18 During the ANAO's 2011–12 review of Gate Review documentation for other projects in the MPR, it was noted that a Gate Review for ARH Tiger Helicopters is scheduled for February 2013 and that Final Materiel Release (FMR) is expected to be delayed to February 2013.[124] However, the project's Project Data Summary Sheet (PDSS) indicates an FMR date of July 2012 (representing a further expected slippage of some seven months). Similarly, for SM-2 Missile, the Gate Review held in August 2012 noted an inability to achieve FMR in the currently scheduled timeframes and suggested that the FMR date of January 2013 be amended to the second quarter of 2013 (representing expected slippage of up to a further five months).

3.19 In 2012–13 the ANAO will further assess the Gate Review process for potential efficiencies and for completeness in our review procedures.

Projects of Concern

3.20 The Projects of Concern list was established in 2008 to focus the attention of senior management within the Defence Organisation and industry on solving the issues required to remediate listed projects. Projects are placed on the list by the Minister for Defence and the Minister for Defence Materiel on the recommendation of the CEO DMO. Projects are put on the list when, for

[122] This advice was set out in a minute to the CEO DMO from the Deputy CEO DMO, 13 October 2011.

[123] Australian National Audit Office, *2010–11 Major Projects Report*, Part 3, p. 181.

[124] This advice was set out via correspondence to the ANAO from the Director General IPPO, 30 October 2012.

example, there are significant challenges with cost, schedule or capability delivery.[125]

3.21 Government reforms to further strengthen the Project of Concern process were released in June 2011.[126] These reforms include:

- tightening the processes for adding and removing projects from the list;
- where a company has a project on the list, weighing their performance in remediating the project when evaluating tenders for other projects; and
- holding bi-annual reviews with Defence and industry representatives which will give the Minister for Defence Materiel a better understanding of the progress of remediation strategies.

3.22 In July 2012, the Minister for Defence and the Minister for Defence Materiel announced that all of these reforms have been implemented.[127]

3.23 During 2011–12 six MPR projects were continuing Projects of Concern, with one MPR project added to the list: MRH90 Helicopters.[128] The MRH90 Helicopters project has encountered a number of significant technical issues, which triggered early indicators and warnings thresholds for schedule and contractor performance. In November 2011, the Minister for Defence announced that the project had been added to the Projects of Concern list on the basis of the recommendation of the CEO DMO.[129]

3.24 Projects are removed from the Projects of Concern list once the Minister is satisfied that remediation activity has been completed successfully or government has decided to cancel the project.

3.25 In November 2011, the Minister for Defence announced that ANZAC ASMD 2B was no longer a Project of Concern, following the Chief of Navy's agreement, in July 2011, to the operational release of the radar

[125] Minister for Defence, the Hon. Stephen Smith MP, and the Minister for Defence Materiel, the Hon. Jason Clare MP, *Projects of Concern - Update,* 15 October 2010.

[126] Minister for Defence, the Hon. Stephen Smith MP, *Reforms to Projects of Concern,* 29 June 2011.

[127] Minister for Defence Materiel, the Hon. Jason Clare MP, *Defence Capability Plan Reform,* 2 July 2012.

[128] Wedgetail, MRH90 Helicopters, Overlander Vehicles, Air to Air Refuel, ANZAC ASMD 2B and Stand Off Weapon.

[129] Minister for Defence, the Hon. Stephen Smith MP, *Projects of Concern Update,* 28 November 2011.

system, and government's approval in November 2011 to install the system onto the remaining seven ships of the ANZAC class by 2017.[130] In December 2011 the Minister announced that two more MPR projects had been removed. These were: Overlander Vehicles, removed following the selection of a preferred contractor and the commencement of contract negotiations for the Medium Heavy Capability (MHC) component of the project; and Stand Off Weapon, removed following successful testing of the missile and the Chief of Air Force's provision of service release.[131]

3.26 The ANAO has been provided with access to the reporting framework for the remaining three MPR projects listed as Projects of Concern (from a total of six)[132], to gain assurance that the information presented is consistent with the information presented in the 2011–12 MPR.

Early Indicators and Warnings

3.27 The Government announced in May 2011 that it would implement an Early Indicators and Warnings (EI&W) system, with the purpose of identifying problems with projects early, for appropriate action to remediate them.[133] EI&W uses defined triggers to measure projects against cost, schedule, capability, industry or risk thresholds. The systematic response to a project triggering an EI&W threshold is that the IPPO reports the results to the CEO DMO, General Managers and relevant Division Head for line management action.

3.28 In addition, the IPPO makes its own inquiries, checks the timing of the next scheduled Gate Review for that project, and brings it forward as appropriate. Of the 123 projects which have been reviewed by the DMO, 48 have triggered EI&W criteria, including three MPR projects triggered in the first half of their acquisition and five MPR projects triggered in the last half of their project schedule, with the results reported to the Minister for Defence.

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130 ibid.

131 Minister for Defence, the Hon. Stephen Smith MP, *Projects of Concern list halved,* 13 December 2011.

132 Minister for Defence Materiel, the Hon. Jason Clare MP, *Projects of Concern Summit,* 19 November 2012.

133 Minister for Defence, the Hon. Stephen Smith MP, and the Minister for Defence Materiel, the Hon. Jason Clare MP, *Strategic Reform Program*, 6 May 2011.

3.29 A project triggering a breach of mandated thresholds is to be notified to DMO senior management to determine remedial actions, which may include a Gate Review. In 2011–12 four projects from the MPR have had Gate Reviews as a result of triggering EI&W threshold indicators:

- SM–2 Missile, as it was 18 months behind its agreed schedule (largely due to delays in the completion of the FFG Upgrade);
- Additional Chinook due to issues with developing a master schedule;
- Collins R&S due to ongoing issues with the submarines' full cycle docking program; and
- 155mm Howitzer, as the September 2011 Initial Operational Capability (IOC) milestone was not met due to issues with the Course Correcting Fuze capability.

3.30 The IPPO is responsible for the system design, implementation, assessment, and analysis of project performance success criteria against key thresholds to identify issues early. System design and implementation is still in the early stages of development. The DMO intends to introduce further improvements to the system, including more quantifiable indicators.

3.31 In 2012–13, the ANAO will continue to monitor the DMO's progress on EI&W.

Joint Project Directives

3.32 2009–10 saw the introduction of a requirement for Joint Project Directives (JPDs) for all projects approved by government post 1 March 2010.[134] JPDs are designed to provide a single authoritative source of project detail approved by government and are expected to become the key reference point for Defence for all projects into the future.[135] The JPD for each project is also intended to become the base document from which all Materiel Acquisition

[134] Source 1: Joint Project Directive: A project-specific directive issued by the Chief of the Defence Force and Secretary of Defence to the nominated Capability Manager, assigning overall responsibility, authority and accountability for realisation of the capability system to an in-service state. Department of Defence, *Defence Capability Development Handbook 2011*, p. 113.

Source 2: Department of Defence, Information DEFGRAM 50/2010, 4 February 2010.

[135] The importance of JPDs is emphasised by the CEO DMO in his testimony to the Senate Foreign Affairs, Defence and Trade References Committee, 7 October 2011.

Agreements (MAAs)[136] will be designed to meet the materiel requirements specified in the JPD.

3.33 On 16 October 2012, the Minister for Defence drew attention to shortcomings in project management: 'Poor management of projects has included failure on a number of occasions to keep Government fully informed about changes to a project's approved scope, cost or schedule. It is not appropriate for Defence to vary from the approved scope, cost or schedule, without approval from the original decision maker or delegated approval authority'.[137] At government direction, an acquisition baseline review audit had been undertaken, finding that 'all projects were within approved budget, two projects reported variation against the approved scope and around 20 per cent of projects were late against the approved schedule'. In response to the audit, the Government directed that Defence implement a new regime of reporting, against the original project approval. These documents are known as JPDs.

3.34 As part of its review program the ANAO examines a range of governance documents which define project deliverables. Traditionally, MAAs have defined a range of project attributes. Over time, it will become clearer how JPDs will integrate into existing DMO project management documentation, and how this will influence DMO project management practices. As a consequence, the ANAO will take into account JPDs in its review program in future years.

The Business Processes for Major Projects

Business systems

3.35 In the 2010–11 MPR, the ANAO reported that the control environment of each examined project differed, due to the large range of corporate and project management IT applications being employed by the different project offices. During the 2011–12 review, the same observations apply across the 29 Major Projects. This has again resulted in an inconsistency between the

[136] Materiel Acquisition Agreement: An agreement between Defence and the DMO which states in concise terms what services and products the DMO (as a supplier) will deliver, for how much and when. Australian National Audit Office, *2011–12 Major Projects Report*, Appendix 7, p. 591.

[137] Minister for Defence, the Hon. Stephen Smith MP, Minister for Defence and Defence Materiel - *Defence Capability Reform,* press release, 16 October 2012.

information produced by each of the project's IT systems (i.e. risk management, financial management, and document management systems) and highlights an issue for the DMO in ensuring reliable and consistent information to properly inform project management and decision making.

3.36 In its Report 429, the JCPAA expressed its concern 'that despite some action being taken [by the DMO] to improve consistency of information the expected improvements have not yet been achieved'.[138] Previous evidence to the JCPAA indicated that the problem dates back to around 2000 and that it would take time to resolve.[139] While the Committee acknowledged that some improvement had been made, it stated 'it was not clear what efforts were being made on financial management or document management systems'.[140] The Committee also noted its expectation 'to see concrete evidence of results and progress to achieve consistency of information across projects reported in the next MPR'.

3.37 The DMO has been rationalising its business systems since 2006 as part of the 'As Is System Mapping Project'. In 2010, the DMO informed the ANAO that it was focusing on rationalisation of the finance domain due to resource constraints on progress in reviewing the business systems and implementing recommendations arising from these reviews.

3.38 As part of this focus, the Chief Finance Officer of the DMO established a Financial Systems Governance Board and Finance Information Management Improvement Program in November 2011, with the purpose of facilitating and managing the development, coordination, standardisation and, where appropriate, integration of the DMO's finance system requirements.

3.39 As part of a program to rationalise its information and communications technology systems, the DMO is also in the process of rolling out a single records management system, expected to be completed by the end of 2013.[141]

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[138] Joint Committee of Public Accounts and Audit, Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*, May 2012, paragraph 3.42, p. 22.

[139] Joint Committee of Public Accounts and Audit, Report 422, *Review of the 2009–10 Defence Materiel Organisation Major Projects Report*, April 2011, paragraph 3.39, p. 30.

[140] Joint Committee of Public Accounts and Audit, Report 429, *Review of the 2010–11 Defence Materiel Organisation Major Projects Report*, May 2012, paragraph 3.44, p. 22.

[141] Australian National Audit Office, *2011–12 Major Projects Report*, Part 2, p. 147.

The ANAO will consider progress in this area and the impact on project management in 2012–13.

3.40 The DMO has advised that limited progress has been made overall towards rationalisation, and that further ownership and guidance would be required within the organisation in order to achieve the desired outcome.

3.41 The DMO's business systems will continue to be a focus of the ANAO's review in 2012–13.

Contingency budgets

3.42 A project's total approved budget comprises two elements:

- the programmed budget, which covers the project's approved activities, including approved actions to treat risks that were identified prior to the budget's approval; and
- the contingency budget, which is established to provide adequate budget to cover the inherent cost, schedule and technical risks and uncertainties of the in-scope work of the project and any contingency events that may arise during the conduct of a project.[142]

3.43 Following the JCPAA's interest in this area[143], the ANAO examined the contingency log for each project reviewed in 2011–12.[144] The observations made by the ANAO included the following:

- where projects had used contingency funds, the purpose was within the approved scope of the project, with appropriate formal sign-off required before the contingency funds could be spent;
- the method for managing and recording a project's contingency budget varied, with some projects demonstrating a direct link between the contingency log and the approved risks identified in the risk log, while for other projects there was a less direct relationship;

[142] Defence Materiel Organisation, *DMO Project Management Manual*, April 2012, Chapter 7. Cost Management, paragraph 7.1.5, p. 39.

[143] Joint Committee of Public Accounts and Audit, Report 416, *Review of the Major Projects Report 2007–2008*, November 2009, pp. 13–14.

[144] A contingency log is used to record the use of contingency budget.

- the recording of contingency budget allocations within contingency logs as required by DMO Finance Instructions[145]; and
- where projects allocated contingency funds to mitigate or address an actual risk, the method for assigning costs also varied. Some projects attributed contingency budget on the actual expected costs of the risk treatment, while other projects used a proportionate allocation based on the likelihood of the risk eventuating.

3.44 As reported in the 2010–11 MPR, the ANAO observed that some project contingency budgets included provision for an anticipated difference between price variation obligations built into current supplier contracts with industry[146], and the total price indexation, adjusted for the Specialist Military Equipment Weighted Average (SMEWA)[147] or other appropriate index, to the point of the projects' forecast Final Operational Capability (FOC). Prior to 1 July 2010, the DMO was periodically supplemented for price indexation based on the Non-Farm Gross Domestic Product (NFGDP) deflator.[148] The change to out-turned budgeting highlights areas of insufficient indexation as contingency budgets are utilised or project deficits occur (refer to paragraph 1.38).

3.45 The change in supplementation policy has meant that price indexation has emerged as a major risk or issue for some projects, and for which the contingency funds may need to be drawn upon. These projects are AWD Ships, LHD Ships and ANZAC ASMD 2B.[149]

3.46 The *Defence Procurement Policy Manual* requires that projects have sufficient contingency in their budget to cover future increases in their agreed labour and materials indices.[150] Projects must fund any shortfall in price variation between the supplementation provided and payments made to the contractor. Any shortfall must be paid from contingency in the first instance

[145] Defence Materiel Instruction, DMI (FIN) 01-0-019, *Management of Contingency Budgets in DMO Acquisition Projects*, 21 January 2010; and *DMO Project Risk Management Manual (PRMM) 2010*, Chapter 9 – Contingency Budgets, p. 111.

[146] Contract escalations are usually based on indices linked to the price of labour and materials.

[147] Australian National Audit Office, *2011–12 Major Projects Report*, Part 2, paragraph 2.8, pp. 156–157.

[148] Australian National Audit Office, *2010–11 Major Projects Report*, Part 3, Project Data Summary Sheets.

[149] ibid.

[150] Defence Materiel Organisation, *Defence Procurement Policy Manual*, July 2012, Section 3, Chapter 3.3 Financial Policy and Advice in the Procurement Process, paragraph 21, pp. 3.3-3–3.3-4.

and when the contingency budget is exhausted, the project may apply for a real cost increase to meet the shortfall.

3.47 The ANAO notes that the emergence of any indexation risk has, to some extent, changed the nature and use of the contingency budget from dealing with project risk management to broader price management, and requires project staff to have a greater understanding of the factors that influence indices and their likely movement over the life of the project.

3.48 Further information on contingency management has been provided by the DMO at Part 2, paragraphs 2.48 to 2.49 of this report.

Earned Value Management Systems

3.49 EVMS is a method of using detailed actual cost and schedule information to measure and report project performance, as well as to forecast future performance, and can be used to ensure that project payments do not exceed the value of work performed.

3.50 In November 2009, the JCPAA asked the DMO and the ANAO to investigate the possible inclusion of data from EVMS in the PDSSs and in April 2011, requested this information be included in the 2010–11 MPR.[151] As a result, during the course of the 2011–12 MPR review, the ANAO continued to monitor the extent to which EVMS was being used in projects and the effectiveness of EVMS data in improving the accountability and transparency of the management of Major Projects.

3.51 The JCPAA also recommended that 'the DMO, in conjunction with the ANAO, develop a standardised graphical representation of each project's cost and schedule variance for inclusion in the PDSSs for the 2011–12 MPR'.[152] As a result, a new graph has been included in Section 4.1 of each project's PDSS for the first time in the 2011–12 MPR.

3.52 The Section 4.1 graph presents on the vertical axis the percentage variance of the project cost from budget as at 30 June 2012. The horizontal axis

[151] Source 1: Joint Committee of Public Accounts and Audit, Report 416, *Review of the Major Projects Report 2007–2008*, November 2009, pp. 12–13.

Source 2: Joint Committee of Public Accounts and Audit, Report 422, *Review of the 2009–10 Defence Materiel Organisation Major Projects Report*, April 2011, paragraphs 3.74 to 3.76, p. 36.

[152] ibid., p. xiii.

presents the percentage variance of the project schedule from the original planned FMR and the FOC milestones. Analysis of the 29 projects shows that 28 of the projects are currently within budgeted cost. There is one project (Joint Strike Fighter) where a graph has not been included as the FMR and FOC milestones have not been fully defined.[153]

3.53 As not all projects within the MPR currently utilise EVMS data, graphical presentation of a project's cumulative cost and schedule, as shown in ANAO Audit Report No.6 2012–13, *Management of Australia's Air Combat Capability–F-35A Joint Strike Fighter Acquisition*, 27 September 2012[154], cannot be provided for all projects.

Skills development

3.54 A key challenge for both DMO and the Australian Defence industry is to improve the project management, scheduling, logistics, procurement and engineering services provided to the Australian Government, within current and future workforce constraints. For the past several years, it has been one of the DMO's goals to professionalise and 'up-skill' their workforce[155], as well as to increase the quality and quantity of skilled personnel available to the Defence industry.

3.55 To assist with professionalising DMO staff, the DMO's Directorate of Professionalisation and Staff Development is responsible for the development of certification programs that focus on developing specific competencies and gaining professional qualifications across the Leadership and Executive Management, Logistics, Project Management, Engineering, Commercial and Procurement streams.

3.56 Prior to the start of the initiative in 2005, the DMO had only 153 staff certified in areas of project management, engineering, and accounting.[156] The Directorate advised that currently over 1 200 DMO staff have either been certified or are enrolled in a certification program with a professional body compared with 1 400 staff in 2010–11.

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153 Australian National Audit Office, *2010–11 Major Projects Report*, Part 3, Project Data Summary Sheets.

154 ANAO Audit Report No.6 2012–13, *Management of Australia's Air Combat Capability–F-35A Joint Strike Fighter Acquisition*, Figure 5.2, p. 154.

155 Source: <http://www.defence.gov.au/dmo/about/index.cfm> [accessed 27 September 2012].

156 Department of Defence, *Defence Annual Report 2005–2006*, Volume 2, Table 1.1, p. 13.

3.57 To assist with the development of participants within the Defence industry, the Skilling Australia's Defence Industry (SADI) program was established by the Australian Government in 2005. The aim of the SADI program is to up-skill existing employees, improve the quality and quantity of skills training in the Defence industry, and generate additional skilled positions.[157]

3.58 The SADI program provides funding support to companies and industry associations for training and skilling activities where that training is linked to a Defence capability. Since 2005, the program has funded more than 26 500 training places, including more than 2 600 apprentices.[158] Also, around 260 industry participants have been provided with funding support in trade, technical and some professional skill sets.[159]

3.59 On 30 April 2012, the Minister for Defence Materiel announced a number of reforms to the SADI program to make it easier for companies to access more effective training for workers in Australia's Defence industry.[160]

3.60 To meet the needs of the Australian Defence Force, SADI will invest $215 million[161] within the period 2005–06 to 2015–16, with over $8 million already provided for 2012–13.[162]

3.61 During 2011–12, the DMO also was in the process of implementing a web-based Grants Management System to manage and assess grant applications for funding support of eligible training and/or up-skilling activities within the Defence industry.[163]

3.62 Other government approved programs aimed at up-skilling participants within the Defence industry include the Industry Skilling Program Enhancement package (ISPE) and the Priority Industry Capability Innovation

[157] Source: <http://www.defence.gov.au/dmo/id/sadi/> [accessed 17 September 2012].

[158] Minister for Defence Materiel, the Hon. Jason Clare MP, *Next Round of SADI Grants Open,* 5 November 2012.

[159] Source: <http://www.defence.gov.au/dmo/id/sadi/> [accessed 6 November 2012].

[160] Minister for Defence Materiel, the Hon. Jason Clare MP, *Reforms to Improve the Skilling Australia's Defence Industry* Program, 30 April 2012.

[161] Source: <http://www.defence.gov.au/dmo/id/sadi/> [accessed 6 November 2012].

[162] Minister for Defence Materiel, the Hon. Jason Clare MP, *Next Round of SADI Grants Open,* 5 November 2012.

[163] Source: <http://www.defence.gov.au/dmo/id/sadi/> [accessed 6 November 2012].

Program (PIC IP). ISPE, which was announced in 2008, provides up to $60.8 million over five years.[164] This program incorporates a number of initiatives aimed at enhancing work and future career pathways in the sector by implementing programs at schools and offering Defence technical and engineering scholarships. PIC IP, which was implemented this year, and providing up to $45 million over eight years, is aimed at providing Australian Defence companies direct support in the form of repayable, and matched grants (the recipient matches the funds provided by the Australian Government on a dollar for dollar basis).[165] The program particularly focuses on assisting small to medium sized enterprises to pursue innovative Defence industry projects.

3.63 As the Minister for Defence Materiel has underlined the need for the replacement or upgrade of up to 85 per cent of its military equipment over the next 15 years, he has asked Skills Australia to work with Defence and the Defence industry to develop a plan to ensure Australian industry has the skills to meet this challenge.[166] In March 2012, Skills Australia held consultations with stakeholders around Australia and gathered information to inform deliberations in developing a comprehensive set of recommendations to government.[167]

3.64 In 2012–13, the ANAO will continue to focus on the effectiveness of the SADI and other programs to address the current and future skills gaps and shortage.

[164] Source: <http://www.defence.gov.au/dmo/id/industry_skilling/> [accessed 6 November 2012].

[165] Source: <http://www.defence.gov.au/dmo/id/picip/#program> [accessed 6 November 2012].

[166] Minister for Defence Materiel, the Hon. Jason Clare MP, *Defence Skills Plan to Meet the Challenges Ahead*, 5 September 2011.

[167] Source: <http://www.awpa.gov.au/sector-specific-skill-needs/defence-industry-workforce-strategy/submissions-and-consultations/submissions-and-consultations.html> [accessed 7 November 2012].

Part 2. DMO Major Projects Report

CEO DMO Foreword

I am pleased to present the 2011-12 DMO Major Projects Report (MPR). Since the first DMO MPR, tabled in Parliament in November 2008, which reported on nine of the DMO's major projects, an additional 20 projects, or around 15 per cent of major projects are now reported. Having successfully achieved its objectives, the F/A-18 Hornet Refurbishment project has been removed from the MPR, and two new projects, the Future Naval Aviation Combat helicopter (MH-60R) and Counter-Rocket, Artillery and Mortar (C-RAM) system, have been added.

The DMO MPR is an important component for providing transparency to Parliament of the management of $47.2 billion of projects under management by the DMO. The report also provides quantitative data on DMO's project management performance. Importantly, the report shows that the DMO is delivering well against cost and capability delivery. While schedule performance has improved since the introduction of the two pass approval process, it remains an area for further improvement.

The format of this year's report is similar to that of last year. Chapter One provides an overview of the DMO's performance and discusses key issues, such as risk management, that drive performance. Chapter Two provides a detailed analysis of schedule, cost and materiel capability performance.

Part 3 of this report contains the individual Project Data Summary Sheets (PDSS) for each project. For this year's report, the PDSS format has changed slightly with budgets reported in out-turned dollars accompanied by an assurance statement from each project regarding the adequacy of remaining project budget to deliver the required scope. This replaces the reporting of project expenditure in 'base date' dollars. A new project cost and schedule status graph has also been added.

To ensure that we minimise duplication between the Annual Report and the MPR, some aspects of the DMO business activities that were updated in previous MPRs have not been included in this MPR. However, this year we have focused on those aspects of the DMO business that our key stakeholders, including the Joint Committee of Public Accounts and Audit (JCPAA), have requested.

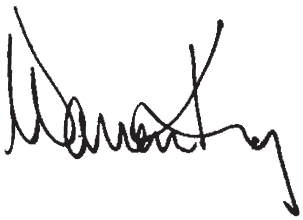
The Chiefs of Navy, Army and Air Force, and the major contractors for each project have reviewed relevant project data. Their views have been considered

in finalising this report.

Over the last year we continued – on average – to deliver our projects according to budget. While schedule remains our biggest concern, reforms are underway and we should see continued improvement on this front. In December 2011, another three projects were removed from the Projects of Concern list. This is a credit to the teams (in DMO and industry) who have worked hard to remediate those projects.

The DMO and ANAO MPR teams continue to have a strong professional working relationship, which has facilitated the delivery of further improvement to the MPR consistent with guidance provided by the Joint Committee of Public Accounts and Audit.

My thanks to the Auditor-General, Mr Ian McPhee, and his staff for their contribution to the overall report, and DMO project office staff of the 29 projects, the DMO MPR Management team, and the numerous other DMO business areas involved in bringing together this DMO MPR.



Warren King

Chief Executive Officer

5 December 2012

Executive Summary

In 2011-12, the Defence Materiel Organisation (DMO) managed just under $10.1b[168] in expenditure across the acquisition projects, sustainment programs and other management services. As at 30 June 2012, the DMO managed approximately 270 major and minor acquisition projects with an annual budget of $4.6b, the sustainment program (comprising around 115 sustainment products) with a budget of $5.4b, and $0.1b for provision of management services and policy advice.

In 2011-12, the DMO continued to analyse the impact of acquisition reforms. For acquisition projects, the DMO's performance is measured in terms of cost, schedule and scope. During 2011-12, the DMO undertook analysis on the schedule and cost elements of project performance.

In relation to cost management, an internal analysis study of over 250 projects approved between 1972 and 2006 and completed by 2011 were assessed. The analysis indicates that:

- 95% closed on or under budget; and
- on average, the DMO continues to deliver projects under budget (about 98% of available funding).

When the performance of these projects was plotted against their year of commencement, a steady improvement in cost management was identified.

An independent study of 25 DMO projects conducted by Independent Project Analysis, Incorporated (IPA) confirmed these findings. Further information on the IPA outcomes is provided in Chapter 1.

Analysis of schedule performance for 149 projects has been undertaken for current and completed projects approved between 1992 and 2011: this analysis demonstrates that prior to the DMO's formation in 2000, acquisition projects regularly exhibited schedule delays of 50% or more.

Further examination of analysis of the 93 projects with commencement dates post 1999 revealed:

- a steady decrease in average delay, achieving 30% by 2007; and

[168] Defence Annual Report 2011-12, Department of Defence, p.227.

- the majority of projects that have commenced since 2007 have not had sufficient time for all potential slippage to be realised, therefore their schedule performance is still to be fully quantified.

DMO Achievements

An overview of cost and schedule performance is shown in Chapter 2. Examples of significant achievements in 2011-12 include:

- Air Warfare Destroyer: The AWD project has achieved a number of important milestones this year including the delivery of hull blocks and major ship combat systems.
- Wedgetail: The Wedgetail project achieved significant successes with the operational use of the Wedgetail system in a number of multi-national exercises including Exercise BERSAMA LIMA 2011 and Exercise RED FLAG 2012.
- Super Hornet: The arrival of the final Super Hornet in October 2011 marked the successful delivery of all 24 aircraft to the RAAF ahead of schedule and within budget.[169]
- Hornet Upgrade: The Hornet Aircrew Training System (HACTS) achieved Final Materiel Release in January 2012.
- Air to Air Refuellers: In September 2011 the Royal Australian Air Force conducted its first operational and evaluation test flight of the KC-30A Multi Role Tanker Transport. To date four of the five aircraft have been accepted.[170]
- C-17 Heavy Airlift: The Heavy Airlift project achieved its Final Operational Capability in December 2011 bringing the project in on time and under budget.
- Bushmaster Vehicles: In August 2011, an upgrade to the Bushmaster vehicles was completed to provide soldiers with better protection against Improvised Explosive Devices (IEDs). The upgrades included installation of new seating and flooring in the cabin to provide additional protection for commanders, drivers and troops.[171]

[169] Defence Media Release, 21 October 2011
[170] Defence Media Release, 16 September 2011
[171] Defence Media Release, 6 October 2011

- ANZAC Anti-Ship Missile Defence: Following the operational release of the lead upgrade ship, HMAS *Perth,* in July 2011, the remaining seven Anzac class frigates will be upgraded with a new anti-ship missile defence radar system that is able to identify, track and guide missiles to multiple targets simultaneously, and incorporates cutting edge technology developed in Australia by CEA.[172]
- UHF SATCOM: On 25 March 2012 the IS-22 Intelsat satellite was successfully launched into orbit and allows improved communications capabilities for the Australian Defence Force. Defence has also purchased an Ultra High Frequency communications payload that allows for improved information sharing between headquarters, commanders and tactical forces.[173]

Reforms

During 2011-12, the DMO continued to pursue organisational business improvement, aimed at enhancing its core business of equipping and sustaining the ADF. Some examples of these include:

- **Independent Project Performance Office (IPPO):** The IPPO has been established within the DMO to review projects and assist project teams to solve problems where necessary[174]. It is responsible for the conduct and management of:
  - Cost Estimation and Analysis;
  - Early Indicators and Warnings;
  - Gate Reviews; and
  - Projects of Concern.
- **Cost Estimation and Analysis:** The IPPO provides assurance to senior DMO management on the robustness of cost estimates and conducts cost reviews of major programs. In 2011-12, the DMO increased cost estimation capability, providing increased support to projects undertaking cost estimation.

[172] Defence Media Release, 28 November 2011
[173] Defence Media Release, 26 March 2012
[174] Defence Procurement and Sustainment Review, Recommendation 3.6.

- **Early Indicators & Warnings (EI&W):** The Early Indicators and Warnings system is designed to identify potential problems with projects by revealing any deviation of defined project requirements (scope, schedule, budget/cost) from agreed parameters.
- **Gate Reviews:** The Gate Review function provides a mechanism for robust review and assurance of major projects. This enables provision of high quality and reliable advice to Defence and Government as to the health and outlook of major projects. The DMO has expanded its program of Gate Reviews which will now include a review of all major projects at least annually as directed by Government.
- **Projects of Concern Process:** The Government has strengthened the Projects of Concern regime to provide increased senior management oversight of identified projects.
- **DMO Risk Management Framework:** A number of risk management improvement initiatives have been introduced and continue to be rolled out across DMO, including: maturing of the 'DMO Wide Risk Management Framework'; and identifying key business control frameworks to better manage risk. One of these improvements is the introduction of Interdependent Mission Management System (IMMS) which is a joint Navy and DMO Risk Management initiative which is further explained at paragraph 1.47.

DMO Challenges

For the 29 projects in this report, the average schedule variance at Final Operational Capability (FOC) is a factor of 1.32 (or an average slippage of 32%). This is an increase of some 2% in schedule slippage to final Operational Capability in the last financial year. The main factor driving this is Capability Manager decisions to align the FOC of projects with operational imperatives.

The DMO and defence industry will continue to focus on improving all aspects of schedule performance, from initial schedule estimation and planning through to project delivery.

Importantly, this schedule variance calculation, against FOC, relates to the delivery of the whole project as scoped by Government. It is not correct to assume that deliveries of 'all elements' of these projects are 32% late. In a number of cases these projects have successfully delivered a wide range of much-needed equipment to the ADF, either to deploy on operations or to use

for critical training activities, on schedule.

Importantly, the DMO delivers the materiel elements of capability to the agreed deliverables of Final Materiel Release (FMR). In the last year, the FMR schedule has slipped by 2%. The main factors driving this are problems associated with sub-system integration and delivery of mature systems.

The DMO assesses that a key driver of the 32% slippage is an initial underestimation by the DMO and/or by industry of the technical maturity or complexity of the more highly developmental and large scale system integration projects. Australia is not alone in experiencing this, as reports similar to this MPR in the UK[175] and USA[176] demonstrate. The DMO continues to actively work in partnership with industry to address the underlying causes through various initiatives, some of which are highlighted in this report.

Key Priorities in 2012-13

The key priorities for the DMO in 2012-13 remain consistent with previous years and are:

- continuing support to ADF operations;
- delivering the Sustainment and Mortimer stream elements for the Defence Strategic Reform Program;
- working with Capability Managers to reduce the cost of ownership of major Defence fleets and systems;
- improving performance on procurement and sustainment; and
- delivering approved Defence Capability Plan (DCP) projects.

Conclusion

The key aspects of this MPR are:

- the removal of one project and inclusion of two additional projects, now totalling 29;
- all projects are delivering capability within the approved budget; and
- the analysis has identified that schedule performance remains relatively steady.

[175] www.nao.org.uk
[176] www.gao.gov

Projects contained in the 2011-12 MPR

Project	First Reported
SEA 4000 Phase 3 – Air Warfare Destroyer (AWD Ships)	2008-09
AIR 5077 Phase 3 – Airborne Early Warning and Control Aircraft (Wedgetail)	2007-08
AIR 9000 Phase 2, 4, & 6 – Multi Role Helicopter (MRH90 Helicopters)	2008-09
AIR 5349 Phases 1 & 2 – Bridging Air Combat Capability (Super Hornet)	2008-09
LAND 121 Phase 3 – Field Vehicles and Trailers (Overlander Vehicles)	2009-10
JP 2048 Phase 4A/4B – Amphibious Deployment and Sustainment (LHD Ships)	2008-09
AIR 9000 Phase 8 – Future Naval Air Combat System Helicopter (MH-60R)	2011-12
AIR 6000 Phase 2A/B – New Air Combat Capability (Joint Strike Fighter)	2010-11
AIR 87 Phase 2 – Armed Reconnaissance Helicopter (ARH Tiger Helicopters)	2007-08
AIR 5376 Phase 2 – F/A-18 Hornet Upgrade (Hornet Upgrade)	2007-08
AIR 8000 Phase 3 – C-17 Heavy Airlifter (C-17 Heavy Airlift)	2007-08
AIR 5402 – Air to Air Refuelling (Air to Air Refuel)	2008-09
SEA 1390 Phase 2.1 – Guided Missile Frigate Upgrade (FFG Upgrade)	2007-08
LAND 116 Phase 3 – Bushmaster Protected Mobility Vehicle (Bushmaster Vehicles)	2007-08

JP 2008 Phase 4 – Next Generation SATCOM Capability (Next Gen Satellite)	2009-10
SEA 1448 Phase 2B – Anzac Ship Anti–Ship Missile Defence (Anzac ASMD 2B)	2009-10
JP 2043 Phase 3A – High Frequency Modernisation (HF Modernisation)	2007-08
AIR 9000 Phase 5C – Additional Chinook Helicopter (Additional Chinook)	2010-11
SEA 1444 Phase 1 – Armidale Class Patrol Boat (Armidales)	2007-08
SEA 1439 Phase 4A – Collins Replacement Combat System (Collins RCS)	2007-08
JP 2008 Phase 5A – Indian Ocean UHF SATCOM Capability (UHF SATCOM)	2010-11
SEA 1429 Phase 2 – Replacement Heavyweight Torpedo (Hw Torpedo)	2009-10
SEA 1439 Phase 3 – Collins Reliability and Sustainability (Collins R&S)	2009-10
SEA 1390 Phase 4B – SM-1 Missile Replacement (SM-2 Missile)	2010-11
SEA 1448 Phase 2A – Anzac Ship Anti–Ship Missile Defence (Anzac ASMD 2A)	2009-10
AIR 5418 Phase 1 – Follow-on Stand Off Weapon (Stand Off Weapon)	2009-10
LAND 17 Phase 1A – Artillery Replacement (155mm Howitzer)	2010-11
LAND 75 Phase 3.4 – Battlefield Command Support System (Battle Comm. Sys)	2010-11
LAND 19 Phase 7A – Counter- Rocket, Artillery and Mortar (C-RAM)	2011-12

Completed Projects Reported in Previous MPRs

Project	First Reported	Final Report
AIR 5376 Phase 3.2 – F/A 18 Hornet Upgrade Structural Refurbishment (Hornet Refurb)	2008-09	2010-11

The lessons learned from previous MPR projects are contained in Appendix 4.

Tables 1 and 2 provide the 30 June 2012 status on key project performance metrics covering cost and schedule across the 29 projects in this year's MPR.

Table 1 - Project Budget Status

Project	Government Approved Budget $m[177]	Price Indexation $m[178]	Foreign Exchange $m[179]	Scope Changes $m[180]	Transfers $m[181]	Budgetary Adjustments $m[182]	Budgetary Cost Savings $m[183]	Net Variation %[184]	Current Budget $m
AWD Ships	7207.4	1173.2	(527.5)	-	-	-	-	0.0%	7,853.1
Wedgetail	3269.5	994.5[185]	(467.9)	225.6	(18.9)	(173.2)	-	-5.3%	3,829.5
MRH90 Helicopters	957.2	679.8	(366.7)	2,597.0	(239.0)	-	-	0.0%	3,628.4
Super Hornet	3728.2	391.2	(440.4)	-	(33.3)	-	(107.2)	0.0%	3,538.5
Overlander Vehicles	2745.3	746.8	(310.5)	(14.8)	4.5	-	-	0.0%	3,171.2
LHD Ships	2959.9	426.9	(344.1)	-	9.3	-	-	0.0%	3,052.1
MH-60R	3029.8	-	(119.6)	-	-	-	-	0.0%	2,910.2
Joint Strike Fighter	2751.6	351.0	(564.2)	-	-	(204.4[186])	-	-7.4%	2,334.0
ARH Tiger Helicopters	1584.0	418.2	117.7	-	(84.3)	(6.7)	-	-0.4%	2,028.9
Hornet Upgrade	1300.0	323.5	(1.1)	221.5	35.0	(3.4)	-	-0.3%	1,875.5
C-17 Heavy Airlift	1864.4	124.0	(144.0)	-	-	-	-	0.0%	1,844.4
Air to Air Refuel	2076.6	484.1	(476.0)	-	(135.5)	(153.6)	-	-7.4%	1,795.7
FFG Upgrade	1392.5	215.6	71.6	(66.7)	(152.6)	(0.8)	(10.1)	-0.1%	1,449.6
Bushmaster Vehicles	295.0	124.6	(6.8)	619.3	-	-	-	0.0%	1,032.1
Next Gen Satellite	884.9	132.4	(156.2)	-	-	-	-	0.0%	861.1
Anzac ASMD 2B	248.8	76.1	(12.4)	214.7	148.7	-	-	0.0%	675.8
HF Modernisation	505.0	148.1	12.7	(80.1)	(4.7)	(0.8)	-	-0.2%	580.1
Additional Chinook	638.0	46.6	(133.6)	-	-	-	-	0.0%	550.9
Armidales	436.8	74.5	(12.1)	67.1	(29.8)	0.7	-	0.2%	537.2
Collins RCS	455.3	56.5	(60.2)	-	(0.9)	(0.8)	-	-0.2%	449.9
UHF SATCOM	461.0	18.0	(46.5)	-	-	-	-	0.0%	432.5
Hw Torpedo	238.1	99.4	(126.5)	213.3	1.0	(0.2)	-	-0.1%	425.1
Collins R&S	72.0	74.4	(6.2)	310.3	(38.3)	(0.8)	-	-1.1%	411.4
SM-2 Missile	552.6	127.9	(73.1)	-	(86.5)	(2.1)	(120.0)	-0.4%	398.8
Anzac ASMD 2A	449.0	101.3	(4.4)	-	(159.8)	(0.1)	-	0.0%	386.0
Stand Off Weapon	370.7	62.1	(42.1)	(50.0)	-	-	-	0.0%	340.8
155mm Howitzer	348.3	17.2	(44.8)	-	-	-	-	0.0%	320.6
Battle Comm. Sys.	333.9	14.7	(35.7)	(7.0)	-	-	-	0.0%	305.8
C-RAM	265.6	5.4	(19.6)	-	-	-	-	0.0%	251.4
Total	41,421.3	7,508.0	(4,340.2)	4,250.2	(785.1)	(546.2)	(237.3)	-1.9%	47,270.6

[177] The portion of Second Pass (or equivalent) budget approved by Government, transferred to the DMO under a MAA with Defence for delivery of the materiel system.

[178] The total of price indexation variations between Second Pass budget and the current budget.

[179] The total of foreign exchange variations between Second Pass budget and the current budget.

[180] The total value of all Government approved project scope changes between Second Pass budget and the current budget.

[181] The total of all transfers to and from other Defence Groups (eg. Defence Support Group) and DMO projects.

[182] The total of all other budgetary adjustments (administrative in nature) outside of price indexation, foreign exchange, scope and transfer variations between Second Pass budget and the current budget.

[183] The total of cost savings attributed to any negotiated foreign military sales or commercial contracts. These funds have been handed back to the Defence Portfolio.

[184] Net variation accounts for budgetary movements outside of price indexation, foreign exchange, Government approved scope changes and transfer variations to the Second Pass budget as a percentage.

[185] Of the $994.5m, $388.1m of this relates to a real cost increase for contract price indexation beyond the supplementation provided by Government.

[186] The $204.4m Budgetary Adjustment for the Joint Strike Fighter was reversed in July 2012 to re-instate the projects original budget.

Table 2 - Project Schedule Status

Project	Original FMR[187]	2010-11 DMO MPR FMR	Current FMR	Variation Factor[188]	Original FOC	2010-11 DMO MPR FOC	Current FOC	Variation Factor[189]
AWD Ships	Dec 17	Dec 18	Dec 18	1.1	Dec 18	Dec 19	Dec 19	1.1
Wedgetail	Nov 12	Nov 12	Aug 13	1.1	Dec 08	Dec 12	Oct 13	1.6
MRH90 Helicopters	Oct 14	Oct 14	Oct 14	1.0	Jul 14	Jul 14	Jul 14	1.0
Super Hornet	Aug 12	Aug 12	Oct 12	1.0	Dec 12	Dec 12	Dec 12	1.0
Overlander Vehicles	Dec 17	Dec 17	Jul 16	0.9	Dec 19	Dec 19	2020	1.1
LHD Ships	Aug 15	Aug 15	Aug 15	1.0	Nov 16	Nov 16	Nov 16	1.0
MH-60R	Dec 23	-	Dec 23	1.0	-	-	Dec 23	1.0
Joint Strike Fighter	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ARH Tiger Helicopters	Jul 12	Jul 12	Jul 12	1.0	Jun 09	Dec 12	Jan 16	1.6
Hornet Upgrade	Aug 11	Nov 11	Sep 12	1.1	Aug 11	Jun 12	Jun-14	1.2
C-17 Heavy Airlift	Dec 11	Dec 11	Dec 11	1.0	Dec 11	Dec 11	Dec 11	1.0
Air to Air Refuel	Feb 13	Feb 13	Oct 13	1.1	Mar 11	Dec 13	Dec 13	1.4
FFG Upgrade	Dec 11	Dec 11	Sep 13	1.1	Dec 05	Dec 11	Dec 12	2.1
Bushmaster Vehicles	Feb 14	Feb 14	Dec 13	1.0	Apr 12	Apr 14	Dec 13	1.0
Next Gen Satellite	Sep 13	Sep 13	Sep 13	1.0	Dec 14	Dec 14	Dec 14	1.0
Anzac ASMD 2B	Jul 17	Jul 17	Sep 17	1.0	Mar 13	Dec 17	Oct 17	1.6
HF Modernisation	Feb 16	Feb 16	Apr 15	1.0	May 05	Jul 16	Aug 15	2.2
Additional Chinook	Jan 17	Jan 17	Jan 17	1.0	Jan 17	Jan 17	Jan 17	1.0
Armidales	Nov 07	Nov 07	Nov 07	1.0	Mar 09	Feb 12	Dec 12	1.6
Collins RCS	Jan 16	Jan 16	Jan 16	1.0	2010	2016	2016	1.7
UHF SATCOM	Sep 12	Sep 12	Sep 12	1.0	N/A	N/A	N/A	N/A
Hw Torpedo	Nov 13	Nov 13	Nov 13	1.0	Nov 13	Nov 13	Nov 13	1.0
Collins R&S	Oct 22	Oct 22	Oct 22	1.0	Jun 14	Sep 22	Sep 22	1.6
SM-2 Missile	Sep 12	Sep 12	Jan 13	1.0	Dec 12	Dec 12	Apr 13	1.0
Anzac ASMD 2A	Jul 17	Jul 17	Sep 17	1.0	Dec 11	Dec 17	Oct 17	1.7
Stand Off Weapon	Dec 12	Dec 12	Dec 12	1.0	Dec 10	Dec 12	Dec 12	1.4
155mm Howitzer	Sep 13	Sep 13	Sep 13	1.0	Dec 13	Dec 13	Dec 13	1.0
Battle Comm. Sys.	Apr 13	Apr 13	Dec 13	1.2	Apr 13	Apr 13	Dec 13	1.2
C-RAM	Nov 12	-	Jan 13	1.1	Nov 12	-	Jan 13	1.1
			Average Variation	1.02			Average Variation	1.30

[187] Where FMR was not included in the original project approval documentation, Original FMR is taken from the latest version of the project's Materiel Acquisition Agreement.

[188] A schedule variance factor of 1 = on time; >1 = late; and <1 = early.

[189] A schedule variance factor of 1 = on time; >1 = late; and <1 = early (calculated against original FOC).

Table 3 - Project Characteristics

Project	Service Customer	Type of Capability[190]	Type[191]	ACAT[192]	Kinnaird[193]	Maturity Stage[194]	Prime System Integrator[195]
AWD Ships	Navy	New	Australianised MOTS	I	Post	Critical Design Review	AWD Alliance
Wedgetail	Air Force	New	Developmental	I	Pre	Acceptance Testing	Boeing Company
MRH90 Helicopters	Army/Navy	Replacement	Australianised MOTS	II	Post	Acceptance Testing	Australian Aerospace
Super Hornet	Air Force	Replacement	MOTS	II	Post	Service Release	US Government
Overlander Vehicles	Army	Replacement	Australianised MOTS	I	Post	Phase 3A: Acceptance Testing Phase 3B: Second Pass	DMO
LHD Ships	Joint	New	Australianised MOTS	I	Post	Critical Design Review	BAE Systems Australia
MH-60R	Navy	Replacement	MOTS	II	Post	Preliminary Design Review	US Government
Joint Strike Fighter	Air Force	Replacement	Developmental	I	Post	Enter Contract	US Government
ARH Tiger Helicopters	Army	New	Australianised MOTS	II	Pre	Acceptance Testing	Australian Aerospace
Hornet Upgrade	Air Force	Upgrade	Australianised MOTS	II	Pre	Service Release	DMO
C-17 Heavy Airlift	Air Force	New	MOTS	III	Post	Service Release	US Government
Air to Air Refuel	Air Force	New	Developmental	II	Pre	Acceptance Testing	Airbus Military
FFG Upgrade	Navy	Upgrade	Developmental	II	Pre	Final Contract Acceptance	Thales
Bushmaster Vehicles	Army/Air Force	Replacement	Australianised MOTS	III	Pre	Acceptance Testing	Thales
Next Gen Satellite	Joint	New	MOTS	II	Post	System Integration & Test	US Government
Anzac ASMD 2B	Navy	Upgrade	Developmental	I	Post	Acceptance Testing	ANZAC Alliance
HF Modernisation	Joint	Upgrade	Developmental	II	Pre	Acceptance Testing	Boeing Defence Australia
Additional Chinook	Army	Replacement	MOTS	III	Post	Preliminary Design Review	US Government
Armidales	Navy	Replacement	Australianised MOTS	III	Pre	Service Release	Defence Maritime Services
Collins RCS	Navy	Upgrade	Australianised MOTS	IV	Pre	Service Release	DMO
UHF SATCOM	Joint	Upgrade	MOTS	II	Post	System Integration & Test	Intelsat
Hw Torpedo	Navy	Replacement	MOTS	III	Pre	Acceptance Testing	US Government
Collins R&S	Navy	Upgrade	Australianised MOTS	III	Pre	Critical Design Review	ASC
SM-2 Missile	Navy	Replacement	Australianised MOTS	III	Pre	Acceptance Testing	DMO
Anzac ASMD 2A	Navy	Upgrade	Australianised MOTS	II	Pre	Acceptance Testing	ANZAC Alliance
Stand Off Weapon	Air Force	New	Australianised MOTS	II	Post	Service Release	US Government
155mm Howitzer	Army	Replacement	MOTS	III	Post	Acceptance Testing	US Government
Battle Comm. Sys.	Army	New	Australianised MOTS	II	Post	System Integration & Test	DMO
C-RAM	Army	New	MOTS	III	Post	System Integration & Test	US Government

[190] 'New' - a capability that has not previously existed in the ADF; 'Replacement' – a current capability that is being replaced by more up to date technology or to respond to a changing threat; 'Upgrade' – an upgrade to existing capabilities.
[191] 'Developmental' – Involving substantial design development and systems integration; 'MOTS/COTS' – Off-the-shelf equipment of Military or Commercial origin; and 'Australianised' MOTS/ COTS, an off-the-shelf design with significant levels of unique adaptation for Australian requirements.
[192] The DMO's categorisation of projects that represent the complexity of the project on a sliding scale of I to IV with ACAT I representing the most complex projects.
[193] Provides an indication of whether the projects were initially developed under pre-or post Kinnaird reforms.
[194] Provides an indication of maturity of a project based on the benchmark stage of a project.
[195] Identifies the entity that has prime systems integrator responsibility for delivering mission and support systems for the project.

1. DMO Strategic Performance in 2011-12

Introduction

1.1 In support of the Defence Mission, during 2011-12 the DMO managed approximately 270 acquisition projects (including both major and minor projects) and 115 sustainment products under management. Its business ranges from relatively simple procurements such as tents and non-combat equipment to highly complex and expensive weapons systems.

1.2 The DMO operates in a diverse and challenging business environment, working closely with Australian and international defence industry to deliver some of the largest and most complex projects in Australia. The DMO aims to deliver the materiel (equipment) elements of capability solutions on time (schedule), on budget (cost) and to exacting standards of quality, quantity and safety. The DMO achieves this, along with its extensive sustainment role, by working with defence industry and through the collective efforts of its professional and skilled workforce located in more than 70 locations around Australia and overseas. The DMO's integrated workforce of more than 7,400 people comprises around 6,300 civilian and 1,100 military personnel as at the end of 2011-12.

Value of the Major Projects Report

1.3 Following the publication of each Major Projects Report, the Joint Committee of Public Accounts and Audit (JCPAA) conduct a review to analyse the report and provide recommendations for improvement. The committee's review of the 2010-11 Major Projects Report was JCPAA Report 429 published in May 2012.

1.4 One of the committee's recommendations was for DMO to examine the usefulness and value of the MPR to a range of external stakeholders. The DMO was requested to include a discussion of findings in the 2011-12 Major Projects Report. [196]

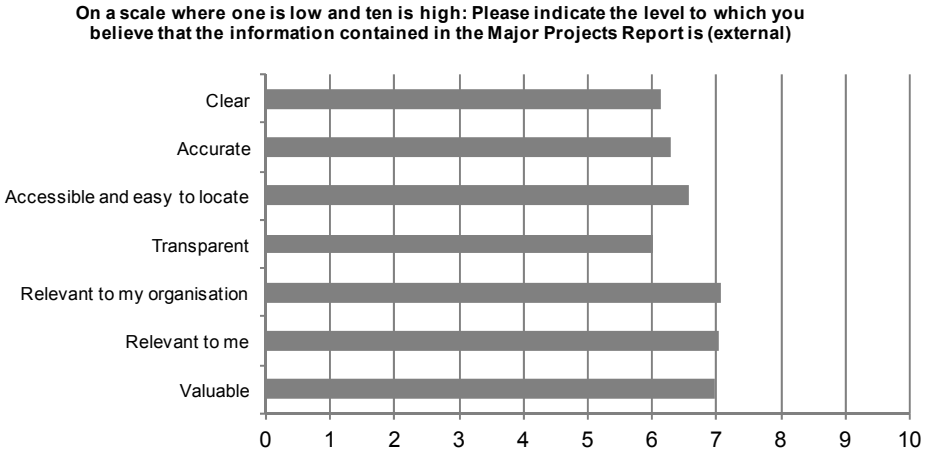
[196] Report 429 Review of the 2010-11 Defence Materiel Organisation Major Projects Report, May 2012, paragraphs 3.85-3.89, page 31.

1.5 Consequently, DMO engaged Ernst & Young to undertake a survey with a sample group of external stakeholders via an online survey to gauge the use of the MPR and its value to other organisations. In the Report, the JCPAA also undertook to gauge similar outcomes from other Parliamentary Committees.

1.6 The survey was sent to 226 external stakeholders with 86 (or 38%), completing the survey. The results of the survey are:

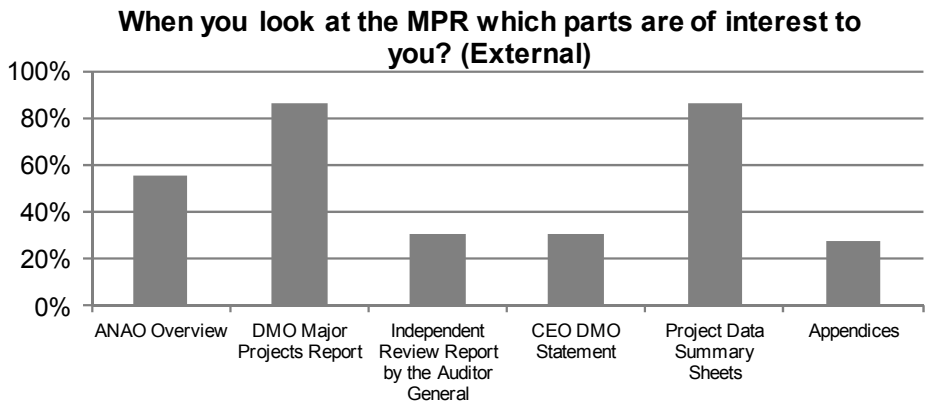
- A high number of respondents identified an awareness of the MPR, and that the scope, focus and size is appropriate.
- The majority rated the report quality between six to seven (ten being high), as shown in Table 1.1.

Table 1.1 – MPR Report Quality



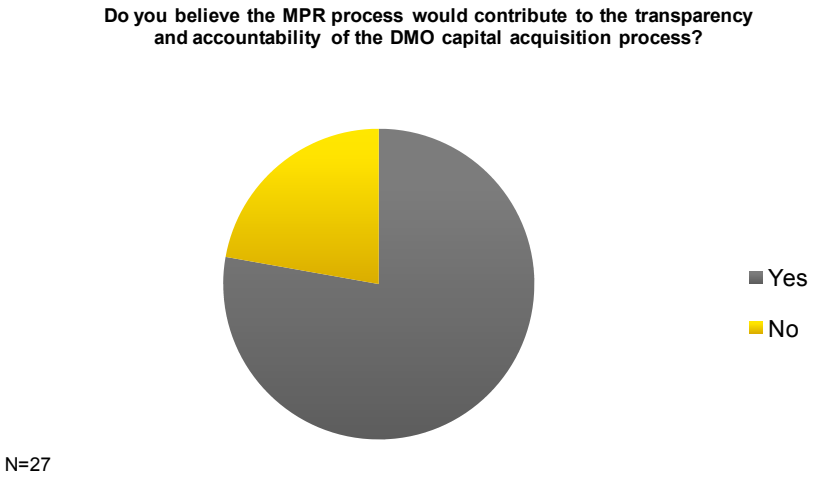
- A majority of respondents identified that the report was useful to them.
- A majority of respondents believed the DMO Chapters and the Project Data Summary Sheets (PDSS) were of the most interest, with the Independent Review Report by the Auditor-General, the CEO DMO Statement, the ANAO overview and the appendices providing a lower interest, as shown in Table 1.2.

Table 1.2 – MPR Report Interest



- A majority of respondents use the MPR to better enable them to understand DMO's project performance and progress. To a lesser extent they use the MPR to report on some of the analysis, as a comparison tool and to understand how comparable projects might be tracking.
- The projects identified as being of the most interest in the 2010-11 MPR were MRH90, AWD, Collins R&S, LHD Ships and JSF. Some projects identified as being of lesser interest were SM-1 Replacement, HF Modernisation, UHF SATCOM and C-17 Heavy Airlift.
- Approximately 78% of respondents believed the MPR contributes to the transparency and accountability of DMO, as shown in Table 1.3.

Table 1.3 – MPR Report Transparency and Accountability



Answer Options	Response Percent
Yes	77.8%
No	22.2%

DMO Overview

1.7 The DMO is primarily responsible for managing the procurement and ongoing sustainment of the materiel systems component of capability, comprising mission systems, designated elements of training and non-infrastructure equipment for facilities that support the operation of ADF equipment, such as simulators, trainers and unique test equipment. Defence has overarching responsibility to deliver all inputs to capability.

1.8 A Capability, defined as 'the power to achieve a desired operational effect in a nominated environment, within a specified time, and to sustain that effect for a designated period'[197], is generated by a number of Fundamental Inputs to Capability (FIC) namely:

- organisation;
- personnel;
- collective training;
- materiel systems;

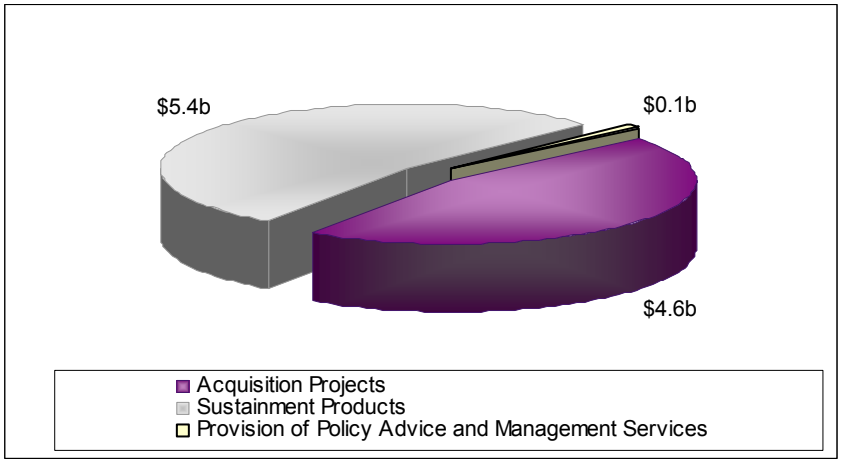
[197] Defence Capability Development Handbook, August 2011

- supplies;
- facilities;
- support;
- command; and
- management.

1.9 Capability systems have a life cycle that begins with the identification of a need, moving through to identifying the requirements, then to the acquisition of the capability, operating and sustaining it in-service, and then the disposal phase once the equipment is no longer required.

1.10 As figure 1.1 demonstrates, the 2011-12 budget allocation between acquisition and sustainment is relatively evenly distributed. This demonstrates the strategic significance of sustainment activities and the ongoing effort required to maintain the necessary level of operational capability. The size of the sustainment budget also reflects the technically challenging nature of sustainment activities. The budget for provision of management services and policy advice is relatively small (representing approximately 1% of the DMO's total budget), to maintain the essential DMO corporate management and governance functions that support the acquisition project and sustainment product functions.

Figure 1.1 – DMO Budget Allocation to Acquisition Projects, Sustainment Products and Management Services 2011-12



DMO Major Acquisition Program – Financial Performance

1.11 The financial performance of the DMO Major Acquisition Program in 2011-12 was again successful. The Program achieved within 0.25% of its

budgeted accrual plan published at the time of Additional Estimates. The strong performance for the Program was underpinned by the overall successful result of projects in achieving their planned expenditure estimates for the year. Excluding the impact of the accelerated acquisition arrangements for the newly approved AIR 8000 Phase 2 Battlefield Airlift Caribou Replacement, major projects achieved, in aggregate, within 0.5% of their estimates. The 2011-12 result is the second year in a row in which the DMO Major Acquisition Program has achieved overall above in year planned financial results.

1.12 DMO's approach to managing the Acquisition Program budget in 2011-12 continued to be based on 'portfolio management' techniques. Under this approach, DMO manages the funding requirements for the major projects as a 'portfolio' whereby the risk of variation between planned and actual expenditure for individual projects is offset against individual performances of other projects in the 'portfolio'. DMO then manages the 'systematic' risk of program expenditure slippage by applying a 'management margin' at a whole-of-program level. At the time of the 2011-12 Budget, the management margin for the Acquisition Program was 15%. This was consistent with historical outcomes and this heuristic approach continues to be useful for forecasting program outcomes. Indeed, Mark Thomson of the Australian Strategic Policy Institute (ASPI) has commented that: "Given the consistent tendency of projects to underperform by around 15%, the current and longstanding application of over-programming is entirely appropriate."[198]

1.13 In the 2011-12 MPR, Project Assurance Statements have been introduced to provide confidence that projects can be delivered within the approved budget out-turned for inflation. DMO has also strengthened the policy supporting the review and estimating of project expenditure requirements. These assurance statements have been validated by an external independent company for five of the projects reported this year. It is anticipated that the approach of external validation of cost impacts of inflation will be provided for the most costly projects in future MPRs.

1.14 The limitations in the enterprise systems for managing project financial information have been highlighted in previous editions of the MPR. Improvements are being pursued through a range of strategies. DMO is continuing to pursue its Acquisition Budget Management Improvement

[198] ASPI, *The Cost of Defence: ASPI Defence Budget Brief 2011-12*, p113

Program (ABMIP) which has a goal of a transitioning the functions from its current program-level budget management system for the Acquisition Program (CEPPlan) to the enterprise budget management system (BORIS). As responsibility for meeting DMO's information system needs rests with Defence, DMO is continuing to work within Defence to prioritise requirements in order to progress this reform.

1.15 In addition to improvements to program-level budget management and reporting, ABMIP also aims to standardise project financial management tools across DMO projects to support data integration between the project and program levels. A business case for an Integrated Project Management System (IPMS) has been developed and a cost management system that will interface between OpenPlan Professional (schedule) and ROMAN/BORIS financial systems to automate and increase the integrity of project data and reporting is being scoped.

1.16 Looking forward, the financial management environment for the DMO Acquisition Program will be challenging in the immediate future. The Government decisions taken in the context of the 2012-13 Budget to reduce the scope of a small number of major projects and delay the schedule of others are part of an overall reduction in Defence capital investment to contribute to the Government's broader fiscal objectives. The reduced flexibility resulting from these reductions and the potential volatility of such a capital intensive program, will present challenges for the DMO into the near future.

Out-turned Budget Management

1.17 When considering and approving budgets, the Government must take account of the estimated impact of inflation over the life of a project. This forecasting of future inflation impacts in a budgetary construct is known as out-turning. From 2010 all DMO major capital projects are managed within an out-turned budget, ie. the impacts of inflation on total project budget for the duration of the project are estimated at the beginning of the project. The DMO is required to deliver within that estimate without any further supplementation for inflation.

1.18 Presenting PDSS cost information in actual values and comparing that to current, approved, out-turned budget data has a number of significant advantages over base date comparisons used in previous MPRs. These advantages include:

- an immediate and transparent view of the cost to complete a project against the available funding envelope enables potential cost pressures to become immediately visible;
- out-turning is consistent with the way that the DMO is currently managing project budgets;
- historical project expenditure life to date values do not need to be manipulated or de-escalated (i.e. into base date dollars), and are reported in the same way as in other published documents (i.e. Defence Annual Report, Portfolio Budget Statements and Portfolio Additional Estimates Statements) and as reported in DMO's financial information systems;
- project expenditure is referenced and verified by the DMO's existing financial information management system (ROMAN) and is subject to financial statement audit;
- project budgets reflect the current project approval; and
- project budgets are easily verified by reference to the DMO's record of project budget approvals – Capital Equipment Program Planning (CEPPlan) system.

Projects included in the DMO Major Projects Report

1.19 The 29 major DMO projects covered by this MPR are shown in table 1.4.

Table 1.4 – List of 2011-12 MPR Projects by Total Approved Budget[199]

Project Name	Project Number	2011-12 In-Year Budget $m	Total Approved Project Budget $m
Air Warfare Destroyer	SEA 4000 Phase 3	$695.4	$7,853.1
Airborne Early Warning & Control Aircraft	AIR 5077 Phase 3	$313.7	$3,829.5
Multi Role Helicopter	AIR 9000 Phase 2, 4 & 6	$259.5	$3,628.4
Bridging Air Combat Capability	AIR 5349 Phase 1 & 2	$128.6	$3,538.5
Field Vehicles and Trailers	LAND 121 Phase 3	$111.3	$3,171.2
Amphibious Deployment and Sustainment	JP 2048 Phase 4A & 4B	$622.7	$3,052.1
Future Naval Combat System	AIR 9000 Phase 8	$175.4	$2,910.2
New Air Combat Capability	AIR 6000 Phase 2	$58.3	$2,334.0
Armed Reconnaissance Helicopter	AIR 87 Phase 2	$85.4	$2,028.9
F/A-18 Hornet Upgrade	AIR 5376 Phase 2	$72.7	$1,875.5
C-17 Heavy Airlifter	AIR 8000 Phase 3	$16.0	$1,844.4
Air to Air Refuelling	AIR 5402	$149.8	$1,795.7
Guided Missile Frigate Upgrade	SEA 1390 Phase 2.1	$8.9	$1,449.6
Bushmaster Protected Mobility Vehicle	LAND 116 Phase 3	$87.3	$1,032.1
Next Generation SATCOM Capability	JP 2008 Phase 4	$97.7	$861.1
Anzac Ship Anti Ship Missile Defence	SEA 1448 Phase 2B	$68.7	$675.8

[199] The convention used in this report is to list projects in order of their total approved budget to deliver the project, from highest to lowest. Where the analysis requires a different order, an explanation is provided.

High Frequency Modernisation	JP 2043 Phase 3A	$6.1	$580.1
Additional Chinook Helicopter	AIR 9000 Phase 5C	$16.8	$550.9
Armidale Class Patrol Boat	SEA 1444 Phase 1	$4.0	$537.2
Collins Replacement Combat System	SEA 1439 Phase 4A	$4.7	$449.9
Indian Ocean UHF SATCOM Capability	JP 2008 Phase 5A	$35.3	$432.5
Replacement Heavyweight Torpedo	SEA 1429 Phase 2	$11.8	$425.1
Collins Reliability and Sustainability	SEA 1439 Phase 3	$14.8	$411.4
SM-1 Missile Replacement	SEA 1390 Phase 4B	$19.1	$398.8
Anzac Ship Anti Ship Missile Defence	SEA 1448 Phase 2A	$42.3	$386.0
Follow-on Stand Off Weapon	AIR 5418 Phase 1	$32.8	$340.8
Artillery Replacement	LAND 17 Phase 1A	$33.1	$320.6
Battlefield Command Support System	LAND 75 Phase 3.4	$61.0	$305.8
Counter Rocket, Artillery and Mortar	LAND 19 Phase 7A	$51.6	$251.4
	Total	**$3,284.8**	**$47,270.6**

DMO Strategic Risk Environment

1.20 The Defence White Paper 2009[200] highlights that Defence planning is, by its very nature, a technically difficult and long-term business, and is an area of public policy where decisions taken in one decade have the potential to affect Australia's sovereignty and freedom for decades to come. This is driven by the complex and rapidly evolving nature of military technology and the necessarily long lead times involved in developing, acquiring and fielding defence systems.

1.21 The Defence White Paper also notes, "We cannot have perfect knowledge of the future, and the range of uncertainties is wide. As new information becomes available and we reassess our strategic outlook, we need to be prepared to adjust the balance of our portfolio of capabilities and the way in which we hedge against different types of risk"[201]. In other words, a change in circumstances may dictate acquiring different capabilities.

Benchmarking DMO Project Performance

1.22 In 2012, the DMO engaged a private sector consultant, Independent Project Analysis, Incorporated (IPA) to benchmark DMO's performance in managing projects against the private sector. IPA drew a number of conclusions by comparing a representative sample of over 100 DMO projects to its database of over 14,000 projects from over 200 companies world wide. IPA then examined the performance of 25 DMO projects in detail against industry projects that were determined to be of comparable scope. Analysis focused on the project schedule between contract signature and Initial Materiel Release (IMR) (Initial Operational Capability (IOC) for older projects) as it was the period most suitable for direct comparison with IPA's commercial industry data.

1.23 IPA found that, for the period from contract signature to IMR, there had been significant improvement since the 2003 Procurement Review (also known as the Kinnaird Review). While this independent analysis was on a relatively small sample of 25 DMO projects, it is supported by separate DMO internal analysis that identified average schedule slippage reducing from 50% to approximately 30% over the past decade.

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200 Defending Australia in the Asia Pacific Century: Force 2030. Defence White Paper 2009.

201 Defending Australia in the Asia Pacific Century: Force 2030. Defence White Paper 2009, Para 3.20, p.28.

1.24 Of further interest was a comparison of the median and mean durations of the DMO projects against benchmark projects from global commercial industry. IPA's analysis shows that median DMO schedule performance was superior to Australian commercial industry and comparable to global industry.

1.25 The mean duration of the DMO projects, however, was longer. This indicates that while the majority of DMO projects perform as well as the industry benchmark projects, some projects experience schedule delays to a greater extent than their industry counterparts. This may reflect the necessity for Defence to persist in order to deliver a required capability whereas industry may be more attuned to commercial imperatives.

1.26 IPA also assessed the comparative level of difficulty in delivering DMO projects using a 'project difficulty index' which is a function of a project's level of difficulty combined with the organisation's experience in conducting similar projects. The results found DMO projects (both developmental and off-the-shelf) to be more difficult than the average industrial project. This was expected for DMO's developmental projects, which involve a high degree of innovative design, however somewhat surprising for off-the-shelf projects. IPA's explanation is that all DMO projects operate in an environment made complex by the involvement of a large number of stakeholders, various logistics issues, the need to integrate with existing platforms or systems and a complex development process.

1.27 With regard to cost performance, IPA noted that it is rare for DMO projects to overrun their cost budgets, whereas overruns of more than 25% are common in similar commercial projects. IPA hypothesised that DMO's strong cost performance may result from drivers such as:

- frequent use of fixed price contracts;
- very good contract control processes; and
- the setting of conservative budgets.

Acquisition Projects

1.28 Projects managed by the DMO can be categorised as:

- Military-Off-The-Shelf (MOTS) and Commercial-Off-The-Shelf (COTS) are acquisitions for equipment, hardware or software that already exist, are in-service with one or more international customers for an

equivalent purpose and require minimal or no modification. For example Project AIR 8000 Phase 3 (C-17).

- Australianised MOTS are acquisitions where an Off-The-Shelf product is modified to meet unique Australian requirements such as Bushmaster vehicles.
- Developmental are acquisitions where an Off-the-shelf product or solution does not currently exist or suit the ADF's unique requirements. A solution needs to be delivered through: developing a new product; integrating existing Off-The-Shelf components to deliver a new product; or participating in another nation's development program.

1.29 It can be expected that cost, schedule and risk parameters increase as the requirement for Australianisation or development work increases. Notably, the category of a project can evolve; for example the Joint Strike Fighter is currently developmental in nature but should eventually become MOTS when it enters production line delivery.

1.30 The Defence White Paper 2009 identifies that MOTS and COTS solutions will be the benchmark against which a rigorous cost-benefit analysis of military effects and schedule aspects of all proposals will be undertaken. This is consistent with the Defence Procurement and Sustainment Review (Mortimer Review). The key consideration is balancing the need to meet unique or specific capability requirements against the likely increase in project risk.

Off-The-Shelf Equipment

1.31 Defence policy mandates that if an Off-The-Shelf (OTS) option exists for Defence's capability requirements, it will be presented for Government consideration and will be the benchmark against which a rigorous cost-benefit analysis of any additional capability is sought, taking into account the cost and risk of doing so.

1.32 Likewise, any option that proposes 'Australianisation' or modification to an existing OTS capability solution must detail the rationale and associated costs and risks to undertaking such modifications.

1.33 Projects seeking First Pass Approval during 2011-12 were subject to this policy, which ultimately aims to provide greater visibility and fidelity over the

risk identification and treatment process associated with capability solutions, including OTS.

1.34 OTS solutions are not free of risk and any cost/benefit analysis of OTS solutions must consider the potential benefits and risks of OTS solutions, expanded under Table 1.6. The major benefits of OTS include: proven solution; more predictable cost and schedule; the use of global supply chains; greater potential for interoperability with allies; and, access to potentially lower cost and better informed upgrade cycles. These benefits should be balanced against possible risks and costs of OTS which include: potentially, not delivering leading edge technology; a market driven product which may not fully meet the ADF's capability need; market-driven product/update cycles with which Defence must keep pace and fund; potentially limited access to technical data; certification and regulatory challenges; integration costs of disparate systems; and the strategic need for Australian industry capability and a secure supply chain which may not be possible for an overseas sourced OTS.

Table 1.6: Off-The-Shelf Benefit and Risk Summary

Benefits of Off-The-Shelf	Constraints, Risks and Cost Drivers of Off-The-Shelf
Proven Solution: By definition, OTS products are mature solutions that have completed the higher risk research, development, evaluation and certification activities and, in most instances, have been proven in service. Predictable Cost and Schedule: Because OTS products have completed development, the unit price and delivery schedule is known. Global Supply Chains: There is potential to leverage international supply chains to reduce costs and secure diversity of supply. Interoperability: Where the same OTS systems are already in service with allies, there is an inherent level of	Technological 'Edge': by definition, OTS products are mature solutions and may not offer leading edge capability. Market Driven Capability: OTS product functionality is market driven, and can fall short of Australia's full mission requirements. Intellectual Property & Technical Data: OTS products are developed for commercial benefit, and the competitive advantage resides in the intellectual property. Therefore, there is usually limited technical data available and opportunities for Australian-specific modifications and support may be limited.

interoperability. Upgrades: OTS products are enhanced and upgraded based on the experiences of multiple users, and the benefits and costs on these improvements are shared across multiple customers.	Integration Risk: Capability needs are rarely satisfied by a pure standalone OTS solution and require some level of integration (e.g. into platforms, with legacy systems, with other off-the-shelf systems, business processes and doctrine).

1.35 The JCPAA, in Report 429, requested that for future MPRs a disclosure is given by each new project "*that MOTS and COTS options have been explicitly considered and eliminated for particular reasons before final procurement decisions have been made*."[202] The new requirement is to be incorporated from the 2012-13 Major Projects Report onwards and will be disclosed by new projects in the Project Data Summary Sheet.

Progress on Reform

1.36 Since the DMO was established in 2000, there has been a commitment to the process of continual improvement. As part of that process, procurement in Defence has been the subject of a number of reviews including the Kinnaird and Mortimer Reviews, the Defence Budget Audit, numerous ANAO acquisition or sustainment performance audits and more recently the Rizzo Review.

1.37 These reviews in conjunction with internal business improvement initiatives have been major contributors to enhancements in the procurement process, and stronger links through the entire capability development lifecycle. There is now clear evidence of improvement in military equipment project performance across Defence and the DMO.

1.38 Based on external and internal analysis of past performance, the DMO is becoming more effective in delivering projects. The DMO has delivered projects at an average of 98% of available funding with steady improvement in project schedule.

1.39 Since 2000, the average level of schedule slippage has decreased from over 50% to around 30% and there are signs of further improvement. In addition, the number of projects being delivered either ahead or on schedule

[202] JCPAA Report 429, May 2012, page 25, paragraph 3.61

has doubled and a recent study[203] has shown that DMO project schedules are now comparable with the private sector.

DMO Wide Risk Management Framework

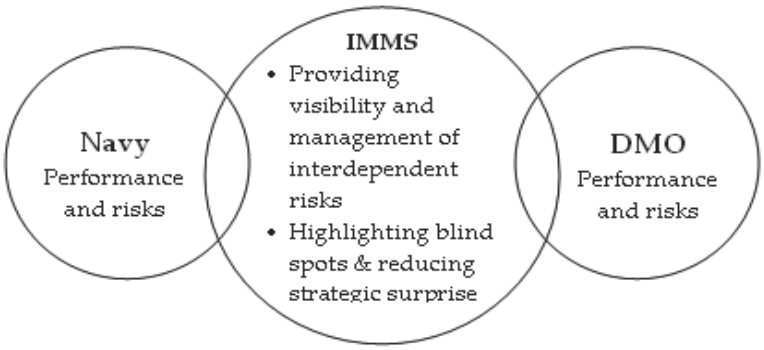
Strengthening the DMO Relationship with Navy

1.40 The Rizzo Review highlighted, among other things, the importance of a strong and functioning relationship between the DMO and Navy. Information sharing has been identified as one of the keys to enhancing maritime sustainment.

1.41 With this in mind, the DMO enterprise risk management team has been working with Navy Headquarters to develop a more collaborative management system.

1.42 This system, known as the Interdependent Mission Management System (IMMS) is designed to highlight sustainment 'blind spots' – that is information that may be known to one organisation, but not to the other. This will help to ensure that senior decision makers in both the DMO and Navy have a common and current understanding of the condition of Navy assets.

1.43 IMMS is designed to reflect the key information detailed in the Sustainment Product Schedules for each fleet and the deliverables outlined in the Materiel Sustainment Agreements between the DMO and Navy. IMMS will also help the DMO and Navy to manage the interdependent risks inherent in these agreements and schedules as it highlights performance, accountability and responsibility.



[203] DMO Major Project Schedule Benchmarking - Comparing Defence Project Performance with Commercial Industry, September 2012.

1.44 IMMS is not a reporting tool; rather it lies above existing reporting systems in both the DMO and Navy and gives visibility to the information that is identified as important by the senior decision makers. When used correctly, IMMS can significantly reduce duplicated and/or manual intensive activities, enabling resources to be refocused on core business; a significant benefit in a tight resource environment.

1.45 Developed as a concept demonstrator in November 2011, senior leaders in the DMO, Navy and the Rizzo implementation teams soon accepted IMMS. The system went 'live' in July 2012 and is now linked to the Navy Strategic Management System. Through this linkage, IMMS provides a powerful information management and collaborative decision support bridge between the two organisations. IMMS is helping leaders from both the DMO and Navy to understand the implications of their decisions and prioritisation of resources on the delivery of defence capability.

1.46 Looking ahead, there is the potential for other Groups and Services to be able to link into IMMS giving more Defence decision-makers access to this information.

Materiel Implementation Risk

1.47 To improve overall project risk assessments and delineate between technology risk assessments performed by Defence Science and Technology Organisation (DSTO) and broader technical risk issues, the Defence Capability and Investment Committee has agreed the inclusion of a Materiel Implementation Risk Assessment in project approval submissions.

1.48 The Materiel Implementation Risk Assessment is a summary of the most significant risks that will impact on DMO's ability to deliver the materiel system outcomes on time, within budget, and to the required scope and quality over the programmed life-of-type.

Reduction of Risk Management Systems

1.49 During 2012, the number of risk management tools to be used by DMO projects has been reduced to Predict! and Excel spreadsheets. This reduction will allow a greater streamlining of risk management systems across the DMO. The DMO is also in the process of developing a standard risk categorisation framework for projects. This will provide for improved escalation of risks to the strategic level and a more consistent approach to risk assessment.

Project Lessons Learned

1.50 The 2011-12 MPR builds on the Lessons Learned (at the organisational level) reported in last year's report. Set out below is a summary of progress against the key areas of Lessons Learned.

Requirements Management and First of Type Equipment

1.51 To address issues associated with understanding the level of maturity of requirements and progression through the various systems engineering reviews the standard procedure covering Function and Performance Specification (FPS) development was amended to provide further guidance on the maturity levels for the FPS when it is progressing through the capability development process. Additionally, policy, guidance handbook and a standard procedure was promulgated to assist with assessing the suitability and risks for system reviews conducted in acquisition.

1.52 To improve the quality of objective evidence, or data, relating to acquiring and sustaining materiel systems, emphasis has been applied in the areas of configuration management and Verification & Validation (V&V). Improvements in the V&V policy, handbook and a standard procedure provide a more robust approach in utilising risk-based methodology to ensure that the necessary objective evidence is obtained were issued. To reinforce the data quality of materiel systems an overarching configuration management policy has been promulgated to ensure reliable materiel system status throughout acquisition and sustainment.

Integration

1.53 Integration has been identified as an area of potential high risk within DMO due to the complexities associated with the interdependencies between materiel systems and sub-systems. To address this risk two main suites of documentation have been produced this year for interface and integration management. The integration policy and handbook was aimed at providing a basic framework and supporting guidance materiel for integration efforts within DMO whilst the companion interface management policy, handbook and standard procedure provide a standard way to elicited, document and control interfaces.

Resourcing

Workforce Reduction

1.54 The 2012-13 Budget handed down in May has required departments, including Defence, to consider staffing levels within the current and future budgetary constraints being applied. Defence's reduction in workforce is being conducted along with a streamlining of shared services across Defence which aims to provide services with reduced resources. Although not yet determined, it is likely that workforce reductions in the DMO will have some impact on schedule achievement. These potential impacts are being assessed.

Managing Contractors

1.55 DMO will trial the use of managing contractor arrangements in lower risk projects with the aim to reduce schedule, and therefore overall cost, to Defence of project delivery through the use of appropriate incentives to suitably qualified external managing contractors.

Information and Communications Technology (ICT) Services

1.56 The IT systems in use by DMO projects are heavily reliant on CIOG to effectively deliver its outcomes. A strategic DMO wide IT plan clearly identifying priorities for corporate IT systems is under development along with work to further reduce the breadth of software used to support DMO activities.

Professionalisation

1.57 The DMO also continues to expand the range of competency based development opportunities to ensure its workforce can apply the necessary knowledge and skills to the required standards. Evaluation of DMO courses has resulted in reinvigoration of a number of courses as well as the introduction of new courses for project management, engineering, logistics, procurement and contracting job families.

Schedule Management

1.58 A further recommendation from JCPAA Report 429 was for DMO to include in the 2011-12 Major Projects Report a section specifically providing information on the activities being undertaken to minimise schedule slippage and the results of those activities.

Schedule Performance Monitoring

1.59 Initial Materiel Release (IMR) and Final Materiel Release (FMR) key milestones have been embedded into DMO policy. Updates to processes and procedures have been implemented to ensure consistency of the application and integration of IMR and FMR milestones. During 2011-12, the DMO continued the Project Schedule Analysts in Training (PSAiT) program, which is designed to further develop DMO's scheduling skill set (Job Family) in the competencies of project planning, scheduling and analysis. The nine-month development program aims to produce trainees with comparable skills, knowledge and exposure to a scheduler with two to three years experience. The twenty PSAiT trainees of 2012 participated in a targeted learning and development program that included a work placement, compulsory training courses, group workshops and on the job coaching.

Project Performance Reporting System

1.60 The Project Performance Reporting System (PPRS), which was released in November 2011 provides cost and schedule Earned Value Performance metrics to enable managers to assess project status, budget feasibility and overall project achievement against plan. The system was updated in August 2012 to incorporate additional metrics including Early Indicator and Warning parameters and labour indices. Another release is planned for later in 2012 which will include lead indicators.

Schedule Slippage due to Budget Impacts

1.61 The Governments 2012-13 Budget handed down in May included decisions to delay Defence acquisitions due to budgetary constraints. This includes some DMO major projects that have been required to re-align their schedule to realise budget deferrals or reductions as agreed by the Government.

Schedule Estimation

1.62 To improve the quality of schedule estimates, the DMO has established a schedule data repository. The repository leverages data made available by the US Department of Defense through an Memorandum of Understanding signed in 2012 and provides DMO project managers access to project cost and schedule estimation data for software intensive projects as a basis for comparison. DMO has signed an agreement with the United States

Department of Defense, Defense Technical Information Center (DTIC) to participate in the DTIC sponsored Systems and Software Cost Performance Analysis Toolkit. The agreement allows DMO to contribute to and access historical 'completed actual' system development data (sanitised to prevent projects identification). Schedule and Cost Estimation Relationship derived from the data can be use as Basis of Estimate in project planning and schedule preparation. The DMO, in conjunction with Capability Development Group (CDG) is developing a Defence Cost and Schedule Estimation Manual which will assist projects with the standards required for the development of cost and schedule estimates at First Pass and Second Pass. A more standardised approach to schedule estimation and access to data to benchmark estimates will provide the baseline for future estimation improvements.

DMO Schedule Compliance Risk Assessment Method (SCRAM)

1.63 The Schedule Compliance Risk Assessment Method (SCRAM), developed by the DMO to foster and encourage schedule performance improvement, has been further refined. To date, eleven assessments have been undertaken, or are underway, including a second review of the AIR 6000 New Air Combat Capability (NACC) Joint Strike Fighter System Demonstration and Development (SDD) phase. SCRAM is based on an ISO 15504 (an Assessment Framework Standard) compliant Process Reference and Assessment Model (PR/AM) which is a model of schedule management processes and best practices, structured using 'cause and effect' architecture to facilitate identification of root causes of schedule slippage for individual projects[204]. The method is also used to estimate the degree of schedule non-compliance through Schedule Risk Analysis Monte Carlo simulation.

1.64 Further development and refinement of the DMO SCRAM Model and the assessment process is continuing, including an update to the PR/AM process reference, the introduction of SCRAM training courses, development of a SCRAM Assessors guidebook and selection of a software assessment tool to improve SCRAM assessment productivity.

[204] Further information on SCRAM and access to SCRAM products can be obtained from the website: http://scramsite.org

Improved Planning

Acquisition and Sustainment Planning Framework

1.65 The Mortimer stream of the Strategic Reform Program includes improvements to DMO's acquisition strategy development process during the requirements phase of the capability systems life cycle. To support this improvement activity, an early exposure draft of the DMO's new Acquisition and Support Implementation Strategy (ASIS) development guidance was released for comment in June 2011. The complete set of ASIS guidance and supporting training is under review and expected to be released in the second quarter of 2013. Two projects are assisting with the development of the accompanying templates to provide a practical document for users.

1.66 Projects are also starting to include provision in their First Pass approval documentation to fund risk reduction activities (Offer Definition) with preferred tenderer(s) in strategic-level acquisitions. This risk reduction activity, early in the Offer Definition stage, requires DMO projects and their preferred tenderer(s) to undertake a thorough examination of assumptions and estimates to reduce project risks and to improve the viability of schedules prior to contract commitment by the Commonwealth. Milestone entry criteria and performance remedies in the ASDEFCON templates are also being adjusted to promote earlier visibility of schedule performance variances and to incentivise better schedule performance by the contractor.

Key Project Documentation

1.67 The DMO has produced a list of Key Project Documentation that is to be maintained by Project Offices to ensure project baselines for cost, schedule, and scope are traceable and maintained. The list of key project documents will be incorporated into policy in the third quarter of 2012.

Capability Development Improvement Program

1.68 The DMO is currently working with CDG to more closely align and integrate schedules through the needs and requirements phase leading to second pass. The Project Management Standardisation Office (PMSO) is assisting CDG with the trialling of Open Plan Professional and the development of a standardised Work Breakdown Structure (WBS). The standardised WBS down to level 4.

Reforms

Establishment of the Independent Project Performance Office:

1.69 On 1 July 2011 the Independent Project Performance Office (IPPO) commenced operations, giving effect to a key procurement reform announcement made by Minister for Defence, Stephen Smith, and Minister for Defence Materiel, Jason Clare[205].

1.70 The establishment of the IPPO also implements one of the key outstanding recommendations of the Mortimer Review into Defence Procurement and Sustainment, which called for an independent office to be established within the DMO to review projects and assist project teams to solve problems where necessary[206].

1.71 The IPPO is responsible for the conduct and management of:

- Cost Estimation and Analysis;
- Early Indicators and Warnings;
- Gate Reviews; and
- Projects of Concern

Early Indicators and Warnings Framework

1.72 Introduction of the Early Indicators and Warnings (EI&W) system was announced by the Minister for Defence on 6 May 2011, and is aimed at identifying problems with projects early in their lifecycle.

1.73 The EI&W system, is intended to identify deviation against pre-defined thresholds of defined project characteristics (scope, schedule, budget/cost) from the Government Approved baselines at Project Initiation, First Pass and Second Pass. Projects triggering a defined threshold will be notified to Government and may then be scheduled for an EI&W Gate Review. The system continues to evolve with an increased focus on identifying *lead* rather than *lag* indicators. That is, identifying project risks as early as possible and

[205] Minister for Defence, Stephen Smith, and Minister for Defence Materiel, Jason Clare, Media Release – Independent Project Performance Office to oversee major Defence projects established, 29 June 2011

[206] Defence Procurement and Sustainment Review, 2008, Recommendation 3.6.

taking action to resolve issues before under-performance against cost, schedule and/or capability is realised.

Strengthening the Gate Reviews

1.74 The Gate Review Assurance Board framework provides an assurance mechanism for a consistent and robust review of major projects. This enables early identification of potential problems thereby ensuring provision of high quality and reliable advice to Defence and Government as to the health and outlook of major projects. Gate Reviews may also be used as a diagnostic tool in assessing potential Projects of Concern and projects that have triggered EI&W.

1.75 Gate Reviews are chaired by DMO senior managers with Board membership tailored to address the specific issues confronting a project (business case, project management, commercial, engineering, stakeholder etc). The Boards have also been strengthened with the inclusion of at least one, and usually two, external members. Board meetings provide a forum for robust, objective discussion that injects a strategic perspective, filters optimism, analyses issues, recommends actions and assists the project to resolve challenges.

1.76 In preparation for the Board meeting, the DMO's Independent Project Performance Office conducts a robust evaluation of the project which ensures issues have been identified and brought to the attention of the Board for investigation.

1.77 If a project fails to convince the Board of its maturity or readiness to progress to the next stage of its lifecycle, the project is directed to address those risks and issues before proceeding and a further Board review may be required before progression to the next stage. Where necessary, recommendations may be made on consideration of the project as a Project of Concern.

1.78 On 26 June 2012, the Auditor-General released the *Gate Reviews for Defence Capital Acquisition Projects* audit report. The report found that although the effectiveness of the Gate Review process has improved since establishing the IPPO in July 2011 there remains opportunity for further improvement. The audit report made three recommendations:

- Recommendation 1: The ANAO recommends that Defence ensures that a control mechanism is deployed to monitor the status and completion

of actions recommended by Gate Review Assurance Boards and agreed by the relevant executive.

- Recommendation 2: The ANAO recommends that Defence:
  - initiates planning to systematically evaluate DMO's Gate Review program. Suitable performance measures need to be identified and put in place early to inform an evaluation; and
  - undertakes that evaluation when sufficient data is available to enable it to draw sound conclusions about Gate Reviews as a project assurance technique
- Recommendation 3: The ANAO recommends that Defence implements a mechanism to systematically collect and analyse data from Gate Reviews relating to the risks that arise in management of capital acquisition projects to enable development of a means of addressing and reducing such risks and incorporates these into its training tools for project managers.

1.79 The DMO agreed to all three recommendations of the audit report and is progressing initiatives to address the ANAO's recommendations.

Strengthening Projects of Concern Process

1.80 The vast majority of the DMO's major projects are delivering the materiel element of capability to the ADF as planned. However, a small number of DMO projects and sustainment products require additional senior management attention to address significant risks relating to schedule, cost, materiel capability and/or commercial factors.

1.81 In consultation with the Government, DMO developed a focused management regime for troubled projects and sustainment products identified as 'Projects of Concern' (PoC). The PoC remediation regime involves close engagement with industry, Defence and Government.

1.82 The PoC regime is closely linked to both the EI&W system and the Gate Review process. Projects triggering one or more EI&W thresholds are usually subject to a diagnostic Gate Review Assurance Board before recommendations are presented to Government on the project's status. A project may be recommended to be added to the Projects of Concern list at this point, if warranted.

1.83 Significant outcomes for PoC during 2011-12 included:

- Continuation of twice yearly PoC Summits involving the Minister for Defence Materiel, Defence and CEOs and senior project managers from the industry companies with contractual responsibility for projects on the PoC list.
- Successful remediation of the following projects and their subsequent removal from the PoC list:
  - LAND 121 Phase 3: Field Vehicles and Trailers (Medium Heavy Capability segment only);
  - SEA 1448 Phase 2B: Anzac Ship Anti Ship Missile Defence;
  - JP 129 Phase 2: Tactical Unmanned Aerial Vehicles; and
  - AIR 5418 Phase 1: Follow-on Stand Off Weapon.
- The addition of the Multi-Role Helicopters project (AIR9000 Ph 2, 4, 6) to the list due to significant technical and schedule challenges.

1.84 The list of PoC projects at 30 June 2012 is contained in Table 1.7.

Table 1.7 – List of Projects of Concern at 30 June 2012

Project Name	Project Number	Date Added
Airborne Early Warning & Control Aircraft	AIR 5077 Phase 3	January 2008
Air to Air Refuelling	AIR 5402	October 2010
Lightweight Torpedo Replacement	JP 2070	January 2008
Electronic Support Measures Upgrade for AP-3C Orion aircraft	AIR 5276 Phase 8B	October 2010
Collins Class Submarine Sustainment	CN10	November 2008
Multi-Role Helicopter	AIR 9000 Phase 2,4,6	November 2011

Better Targeted Management Reporting

1.85 The DMO provides regular performance reports to its key stakeholders including the Government, Central Agencies, Defence Capability Managers and other elements within Defence.

1.86 In 2011-12, the DMO continued its program of reviewing both its internal and external project performance reports. The aim of the review is to have an integrated, targeted and simpler set of performance management reports that better meet user requirements to support timely and informed

decision-making about DMO projects. The reports will also improve information flow.

1.87 In line with this review, in November 2011 the DMO replaced its existing external performance reports with a suite of revised performance reports based on extensive consultation with Government, Central Agencies and Defence Capability Managers.

1.88 The new reports are more succinct and make it easier to readily discern salient information on the performance of DMO projects. They significantly reduce the amount of reporting sent to the Minister each month, without compromising the information provided. The resources required to produce the new reports have also been reduced.

Other Business Improvements

Records Management

1.89 Records Management is about the efficient and systematic control of the creation, receipt, maintenance, use and disposal of records, including processes for capturing and maintaining evidence of business activities and transactions in the form of records.

1.90 The aims of sound Records Management include:

- Compliance with legislation.
- Greater efficiency and accountability, through the consistent creation, capture, maintenance, access, disposal and preservation of records.
- Sound decision making through the use and management of information.
- Provision of accurate advice to government.
- Standardised tools to manage the records for which staff are accountable.
- Effective and efficient use of resources for the management of records.

1.91 Objective enables DMO and Defence to meet their recordkeeping obligations while at the same time facilitating information management and workplace collaboration.

1.92 The DMO is actively progressing the migration of its electronic corporate records into the Defence record management system, Objective, enabling DMO to gain a greater control and management of its records.

2. Summary of Major Project Performance in 2011-12

Introduction

2.1 This chapter presents a performance overview of the 2011-12 DMO MPR, including detailed analysis of the three key variables of cost, schedule and the approved parameters in relation to the required quality, quantity and safety of the materiel element of capability. The analysis commences initially at an aggregate level, discussing performance of all MPR projects collectively, moving to more specific project analysis, before finally identifying the major challenges from 2011-12.

2.2 Given the small sample size of the major projects (29 projects from approximately 192 or 15% of the total major acquisition projects), care has to be taken in attempting to extrapolate data to the entirety of the acquisition portfolio. This is also because the projects in the MPR may not be representative of all DMO projects, especially the balance between the number of Commercial Off–the–Shelf, Australianised Military-Off-the-Shelf and Developmental projects, which often have unique aspects relating to their ongoing procurement and development. Nevertheless the significance of these 29 projects is shown by their expenditure in 2011-12 that amounts to approximately 72% of the total acquisition expenditure in the financial year.

Performance Overview

Major Projects' Outcomes for 2011-12

2.3 Key milestones and successes achieved by the MPR projects during 2011-12 are set out below.

- **Air Warfare Destroyer**

  The AWD project has achieved a number of important milestones this year including the delivery of hull blocks and major ship combat systems.[207]

[207] Defence Media Release, 28 November 2011

- **Wedgetail**

  The Wedgetail project achieved significant successes with the operational use of the Wedgetail system in a number of multi-national exercises including Exercise BERSAMA LIMA 2011 and Exercise RED FLAG 2012.

- **Super Hornet**

  The arrival of the final Super Hornet in October 2011 has marked the successful delivery all 24 aircraft to the Royal Australian Air Force (RAAF) ahead of schedule and within budget.[208]

- **Hornet Upgrade**

  The Hornet Aircrew Training System (HACTS) achieved Final Materiel Release in January 2012.

- **Air to Air Refuel**

  In September 2011 the RAAF conducted its first operational and evaluation test flight of the KC-30A Multi role Tanker Transport. To date four of the five aircraft have been accepted.[209]

- **C-17 Heavy Airlift**

  The Heavy Airlift project achieved its Final Operational Capability in December 2011 bringing the project in on time and under budget.

- **Bushmaster Vehicles**

  In August 2011, an upgrade to the Bushmaster vehicles was completed to provide soldiers with better protection against Improvised Explosive Devices (IEDs). The upgrades included the installation of new seating and flooring in the cabin to provide additional protection for commanders, drivers and the troops being transported.[210]

- **Anzac Anti-Ship Missile Defence**

  Following the operational release of the lead upgrade ship, HMAS *Perth,* in July 2011 the remaining seven Anzac class frigates will be upgraded with new anti-ship missile defence radar system. The new

[208] Defence Media Release, 21 October 2011
[209] Defence Media Release, 16 September 2011
[210] Defence Media Release, 6 October 2011

system is able to identify, track and guide missiles to multiple targets at the same time and incorporates cutting edge technology developed in Australia.[211]

- **UHF SATCOM**

  On 25 March 2012 the IS-22 Intelsat satellite was successfully launched into orbit and will allow improved communications capabilities for the Australian Defence Force. Defence has also purchased an Ultra High Frequency communications payload that allows for improved information sharing between headquarters, commanders and tactical forces.[212]

Major Projects Challenges for 2011-12

2.4 The Project Data Summary Sheets (PDSS) (refer Part 3) have reaffirmed several challenges facing major projects, as reported in previous MPRs. The main challenges include:

- Managing induced schedule delays as a result of budgetary constraints for projects will require careful monitoring to implement measures to manage the impact on existing capabilities the project is to replace (for example; the impact of AWD delays on FFG sustainment).
- **Employing and maintaining an appropriately skilled workforce**. This is particularly important for projects (for example Air Warfare Destroyer, FFG Upgrade and C-RAM) where the skills required are in high demand by other Australian industries. This strategic risk is being addressed through DMO Industry support and skilling initiatives.
- Acquiring new equipment presents **multiple integration challenges for projects**, and existing platforms, including: electronic systems, training and support systems (for example; Air Warfare Destroyer, LHD Ships, Wedgetail, MRH90 Helicopters, Super Hornet, Overlander, MH-60R Helicopters, Hornet Upgrade, Air to Air Refuelling, Bushmaster Vehicles, Anzac ASMD 2B, HF Modernisation, Additional Chinook, Stand Off Weapon, Battlefield Command System and 155mm Howitzer).

[211] Defence Media Release, 28 November 2011
[212] Defence Media Release, 26 March 2012

- **Overestimating by contractors** of the technical maturity of proposed equipment solutions and **underestimating** the level of effort and complexity required to deliver new equipment including: integration, training packages, publications, spare parts and certification processes (for example; Wedgetail, MRH90 Helicopters, ARH Tiger Helicopters, Air to Air Refuelling and Bushmaster Vehicles).
- The **unavailability of in-service equipment**, due to operational requirements, may limit the ability of projects to install and test new or upgraded equipment in accordance with the original planned project schedule (for example; HF Modernisation, Collins RCS, Hw Torpedo, Collins R&S and SM-2 Missile).
- Accelerating the **maturity of the maintenance operations and supply chains** for new equipment to support the transition to in-service use by ADF units (for example; Super Hornet, ARH Tiger Helicopters, C-17 Heavy Airlift, Anzac ASMD 2A, 155mm Howitzer and C-RAM).
- Complying with increasingly **demanding certification and regulatory requirements** including emerging requirements (for example; MRH90 Helicopters, LHD Ships, Joint Strike Fighter, Air to Air Refuelling, Armidales, Hw Torpedo, Collins R&S, Stand Off Weapon and Battlefield Command System).
- Ensuring **access to Intellectual Property** to enable continued further enhancement and improvement of systems. This also has implications for the integration of new capabilities with existing systems (for example; LHD Ships, FFG Upgrade and Stand Off Weapon).

Project Performance

2.5 Table 2.1 provides a summary of budget performance and Table 2.2 provides a summary of schedule performance for the 29 projects in the MPR. Table 2.3 provides a summary of the key characteristics of each project in terms of maturity and type. Analysis shows that while projects have been managed within approved budgets, schedule performance continues to be the key issue for delivery of projects.

Table 2.1 - Project Budget Status

Project	Government Approved Budget $m[213]	Price Indexation $m[214]	Foreign Exchange $m[215]	Scope Changes $m[216]	Transfers $m[217]	Budgetary Adjustments $m[218]	Budgetary Cost Savings $m[219]	Net Variation %[220]	Current Budget $m
AWD Ships	7207.4	1173.2	(527.5)	-	-	-	-	0.0%	7,853.1
Wedgetail	3269.5	994.5[221]	(467.9)	225.6	(18.9)	(173.2)	-	-5.3%	3,829.5
MRH90 Helicopters	957.2	679.8	(366.7)	2,597.0	(239.0)	-	-	0.0%	3,628.4
Super Hornet	3728.2	391.2	(440.4)	-	(33.3)	-	(107.2)	0.0%	3,538.5
Overlander Vehicles	2745.3	746.8	(310.5)	(14.8)	4.5	-	-	0.0%	3,171.2
LHD Ships	2959.9	426.9	(344.1)	-	9.3	-	-	0.0%	3,052.1
MH-60R	3029.8	-	(119.6)	-	-	-	-	0.0%	2,910.2
Joint Strike Fighter	2751.6	351.0	(564.2)	-	-	(204.4)[222]	-	-7.4%	2,334.0
ARH Tiger Helicopters	1584.0	418.2	117.7	-	(84.3)	(6.7)	-	-0.4%	2,028.9
Hornet Upgrade	1300.0	323.5	(1.1)	221.5	35.0	(3.4)	-	-0.3%	1,875.5
C-17 Heavy Airlift	1864.4	124.0	(144.0)	-	-	-	-	0.0%	1,844.4
Air to Air Refuel	2076.6	484.1	(476.0)	-	(135.5)	(153.6)	-	-7.4%	1,795.7
FFG Upgrade	1392.5	215.6	71.6	(66.7)	(152.6)	(0.8)	(10.1)	-0.1%	1,449.6
Bushmaster Vehicles	295.0	124.6	(6.8)	619.3	-	-	-	0.0%	1,032.1
Next Gen Satellite	884.9	132.4	(156.2)	-	-	-	-	0.0%	861.1
Anzac ASMD 2B	248.8	76.1	(12.4)	214.7	148.7	-	-	0.0%	675.8
HF Modernisation	505.0	148.1	12.7	(80.1)	(4.7)	(0.8)	-	-0.2%	580.1
Additional Chinook	638.0	46.6	(133.6)	-	-	-	-	0.0%	550.9
Armidales	436.8	74.5	(12.1)	67.1	(29.8)	0.7	-	0.2%	537.2
Collins RCS	455.3	56.5	(60.2)	-	(0.9)	(0.8)	-	-0.2%	449.9
UHF SATCOM	461.0	18.0	(46.5)	-	-	-	-	0.0%	432.5
Hw Torpedo	238.1	99.4	(126.5)	213.3	1.0	(0.2)	-	-0.1%	425.1
Collins R&S	72.0	74.4	(6.2)	310.3	(38.3)	(0.8)	-	-1.1%	411.4
SM-2 Missile	552.6	127.9	(73.1)	-	(86.5)	(2.1)	(120.0)	-0.4%	398.8
Anzac ASMD 2A	449.0	101.3	(4.4)	-	(159.8)	(0.1)	-	0.0%	386.0
Stand Off Weapon	370.7	62.1	(42.1)	(50.0)	-	-	-	0.0%	340.8
155mm Howitzer	348.3	17.2	(44.8)	-	-	-	-	0.0%	320.6
Battle Comm. Sys.	333.9	14.7	(35.7)	(7.0)	-	-	-	0.0%	305.8
C-RAM	265.6	5.4	(19.6)	-	-	-	-	0.0%	251.4
Total	41,421.3	7,508.0	(4,340.2)	4,250.2	(785.1)	(546.2)	(237.3)	-1.9%	47,270.6

[213] The portion of Second Pass (or equivalent) budget approved by Government, transferred to the DMO under a MAA with Defence for delivery of the materiel system.
[214] The total of price indexation variations between Second Pass budget and the current budget.
[215] The total of foreign exchange variations between Second Pass budget and the current budget.
[216] The total value of all Government approved project scope changes between Second Pass budget and the current budget.
[217] The total of all transfers to and from other Defence Groups (eg. Defence Support Group) and DMO projects.
[218] The total of all other budgetary adjustments (administrative in nature) outside of price indexation, foreign exchange, scope and transfer variations between Second Pass budget and the current budget.
[219] The total of cost savings attributed to any negotiated foreign military sales or commercial contracts. These funds have been handed back to the Defence Portfolio.
[220] Net variation accounts for budgetary movements outside of price indexation, foreign exchange, Government approved scope changes and transfer variations to the Second Pass budget as a percentage.
[221] Of the $994.5m, $388.1m of this relates to a real cost increase for contract price indexation beyond the supplementation provided by Government.
[222] The Joint Strike Fighter Budget was incorrectly adjusted by $204.4m in the DMO CEPPLAN system. This error was corrected in July 2012.

Table 2.2 - Project Schedule Status

Project	Original FMR[223]	2010-11 DMO MPR FMR	Current FMR	Variation Factor[224]	Original FOC	2010-11 DMO MPR FOC	Current FOC	Variation Factor[225]
AWD Ships	Dec 17	Dec 18	Dec 18	1.1	Dec 18	Dec 19	Dec 19	1.1
Wedgetail	Nov 12	Nov 12	Aug 13	1.1	Dec 08	Dec 12	Oct 13	1.6
MRH90 Helicopters	Oct 14	Oct 14	Oct 14	1.0	Jul 14	Jul 14	Jul 14	1.0
Super Hornet	Aug 12	Aug 12	Oct 12	1.0	Dec 12	Dec 12	Dec 12	1.0
Overlander Vehicles	Dec 17	Dec 17	Jul 16	0.9	Dec 19	Dec 19	2020	1.1
LHD Ships	Aug 15	Aug 15	Aug 15	1.0	Nov 16	Nov 16	Nov 16	1.0
MH-60R	Dec 23	-	Dec 23	1.0	-	-	Dec 23	1.0
Joint Strike Fighter	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ARH Tiger Helicopters	Jul 12	Jul 12	Jul 12	1.0	Jun 09	Dec 12	Jan 16	1.6
Hornet Upgrade	Aug 11	Nov 11	Sep 12	1.1	Aug 11	Jun 12	Jun-14	1.2
C-17 Heavy Airlift	Dec 11	Dec 11	Dec 11	1.0	Dec 11	Dec 11	Dec 11	1.0
Air to Air Refuel	Feb 13	Feb 13	Oct 13	1.1	Mar 11	Dec 13	Dec 13	1.4
FFG Upgrade	Dec 11	Dec 11	Sep 13	1.1	Dec 05	Dec 11	Dec 12	2.1
Bushmaster Vehicles	Feb 14	Feb 14	Dec 13	1.0	Apr 12	Apr 14	Dec 13	1.0
Next Gen Satellite	Sep 13	Sep 13	Sep 13	1.0	Dec 14	Dec 14	Dec 14	1.0
Anzac ASMD 2B	Jul 17	Jul 17	Sep 17	1.0	Mar 13	Dec 17	Oct 17	1.6
HF Modernisation	Feb 16	Feb 16	Apr 15	1.0	May 05	Jul 16	Aug 15	2.2
Additional Chinook	Jan 17	Jan 17	Jan 17	1.0	Jan 17	Jan 17	Jan 17	1.0
Armidales	Nov 07	Nov 07	Nov 07	1.0	Mar 09	Feb 12	Dec 12	1.6
Collins RCS	Jan 16	Jan 16	Jan 16	1.0	2010	2016	2016	1.7
UHF SATCOM	Sep 12	Sep 12	Sep 12	1.0	N/A	N/A	N/A	N/A
Hw Torpedo	Nov 13	Nov 13	Nov 13	1.0	Nov 13	Nov 13	Nov 13	1.0
Collins R&S	Oct 22	Oct 22	Oct 22	1.0	Jun 14	Sep 22	Sep 22	1.6
SM-2 Missile	Sep 12	Sep 12	Jan 13	1.0	Dec 12	Dec 12	Apr 13	1.0
Anzac ASMD 2A	Jul 17	Jul 17	Sep 17	1.0	Dec 11	Dec 17	Oct 17	1.7
Stand Off Weapon	Dec 12	Dec 12	Dec 12	1.0	Dec 10	Dec 12	Dec 12	1.4
155mm Howitzer	Sep 13	Sep 13	Sep 13	1.0	Dec 13	Dec 13	Dec 13	1.0
Battle Comm. Sys.	Apr 13	Apr 13	Dec 13	1.2	Apr 13	Apr 13	Dec 13	1.2
C-RAM	Nov 12	-	Jan 13	1.1	Nov 12	-	Jan 13	1.1
			Average Variation	1.02			Average Variation	1.30

[223] Where FMR was not included in the original project approval documentation, Original FMR is taken from the latest version of the project's Materiel Acquisition Agreement.

[224] A schedule variance factor of 1 = on time; >1 = late; and <1 = early.

[225] A schedule variance factor of 1 = on time; >1 = late; and <1 = early (calculated against original FOC).

Table 2.3 Project Characteristics

Project	Service Customer	Type of Capability[226]	Type[227]	ACAT[228]	Kinnaird[229]	Maturity Stage[230]	Prime System Integrator[231]
AWD Ships	Navy	New	Australianised MOTS	I	Post	Critical Design Review	AWD Alliance
Wedgetail	Air Force	New	Developmental	I	Pre	Acceptance Testing	Boeing Company
MRH90 Helicopters	Army/Navy	Replacement	Australianised MOTS	II	Post	Acceptance Testing	Australian Aerospace
Super Hornet	Air Force	Replacement	MOTS	II	Post	Service Release	US Government
Overlander Vehicles	Army	Replacement	Australianised MOTS	I	Post	Phase 3A: Acceptance Testing Phase 3B: Second Pass	DMO
LHD Ships	Joint	New	Australianised MOTS	I	Post	Critical Design Review	BAE Systems Australia
MH-60R	Navy	Replacement	MOTS	II	Post	Preliminary Design Review	US Government
Joint Strike Fighter	Air Force	Replacement	Developmental	I	Post	Enter Contract	US Government
ARH Tiger Helicopters	Army	New	Australianised MOTS	II	Pre	Acceptance Testing	Australian Aerospace
Hornet Upgrade	Air Force	Upgrade	Australianised MOTS	II	Pre	Service Release	DMO
C-17 Heavy Airlift	Air Force	New	MOTS	III	Post	Service Release	US Government
Air to Air Refuel	Air Force	New	Developmental	II	Pre	Acceptance Testing	Airbus Military
FFG Upgrade	Navy	Upgrade	Developmental	II	Pre	Final Contract Acceptance	Thales
Bushmaster Vehicles	Army/Air Force	Replacement	Australianised MOTS	III	Pre	Acceptance Testing	Thales
Next Gen Satellite	Joint	New	MOTS	II	Post	System Integration & Test	US Government
Anzac ASMD 2B	Navy	Upgrade	Developmental	I	Post	Acceptance Testing	ANZAC Alliance
HF Modernisation	Joint	Upgrade	Developmental	II	Pre	Acceptance Testing	Boeing Defence Australia
Additional Chinook	Army	Replacement	MOTS	III	Post	Preliminary Design Review	US Government
Armidales	Navy	Replacement	Australianised MOTS	III	Pre	Service Release	Defence Maritime Services
Collins RCS	Navy	Upgrade	Australianised MOTS	IV	Pre	Service Release	DMO
UHF SATCOM	Joint	Upgrade	MOTS	II	Post	System Integration & Test	Intelsat
Hw Torpedo	Navy	Replacement	MOTS	III	Pre	Acceptance Testing	US Government
Collins R&S	Navy	Upgrade	Australianised MOTS	III	Pre	Critical Design Review	ASC
SM-2 Missile	Navy	Replacement	Australianised MOTS	III	Pre	Acceptance Testing	DMO
Anzac ASMD 2A	Navy	Upgrade	Australianised MOTS	II	Pre	Acceptance Testing	ANZAC Alliance
Stand Off Weapon	Air Force	New	Australianised MOTS	II	Post	Service Release	US Government
155mm Howitzer	Army	Replacement	MOTS	III	Post	Acceptance Testing	US Government
Battle Comm. Sys.	Army	New	Australianised MOTS	II	Post	System Integration & Test	DMO
C-RAM	Army	New	MOTS	III	Post	System Integration & Test	US Government

[226] 'New' - a capability that has not previously existed in the ADF; 'Replacement' – a current capability that is being replaced by more up to date technology or to respond to a changing threat; 'Upgrade' – an upgrade to existing capabilities.

[227] 'Developmental' – Involving substantial design development and systems integration; 'MOTS/COTS' – Off-the-shelf equipment of Military or Commercial origin; and 'Australianised' MOTS/ COTS, an off-the-shelf design with significant levels of unique adaptation for Australian requirements.

[228] The DMO's categorisation of projects that represent the complexity of the project on a sliding scale of I to IV with ACAT I representing the most complex projects.

[229] Provides an indication of whether the projects were initially developed under pre-or post Kinnaird reforms.

[230] Provides an indication of maturity of a project based on the benchmark stage of a project.

[231] Identifies the entity that has prime systems integrator responsibility for delivering mission and support systems for the project.

Budget performance

2.6 Project budgets against which cost performance is measured are subject to variations arising from exchange rate variations, Government approval of changes in scope, transfers to Defence Groups and DMO cost performance. Following the move to out-turned project budgets there will be no variations as a result of inflationary effects.

2.7 Table 2.4 provides analysis of the budget variances measured against original project approval, for the 29 projects in this report by budget variation attribution between the 2010-11 and 2011-12 financial years. The comparative strength of the Australian dollar against other currencies has continued to result in a net reduction against the project approval value. There was one project affected by scope changes in 2011-12, HF Modernisation, with no further mobile platform upgrades to be undertaken resulting from the May 2012 Budget decision.

Table 2.4 - Major Variations to Budget Components

Variance Attribute	Total budget variation (by attribute) to 30 June 2011 $m	Net budget variation within 2011-12 $m	Total budget variation (by attribute) to 30 June 2012 $m
Price Indexation (up to July 2010)	7,481.4	(11.3)	7,470.1
Foreign Exchange	(3,470.0)	(298.9)	(3,768.9)
Scope Changes	4,096.4	153.8	4,250.2
Transfers	(698.3)	(86.7)	(785.0)
Budgetary Adjustments	(341.8)	(204.4)	(546.2)
Budget Cost Saving	(107.2)	(130.1)	(237.3)

2.8 These attributions are defined as follows:

- **Price Indexation**

  From July 2010 DMO commenced the out-turning of budgets, this removed the requirement to apply annual price indexation adjustments to project budgets. Price indexation was applied to project budgets to reflect the indices as agreed by government. This provided a funding stream for projects to financially manage inflation on an ongoing basis

and was applied to the unspent component of the project budget. Price adjustments are in line with the deflator used by Defence to adjust the capital budget (for 2011-12 the deflator was the Specialist Military Equipment Weighted Average). Actual labour and materiel indices within each contract may differ to this deflator.

- **Foreign Exchange**

  Foreign exchange adjustment relates to increases and decreases to the total project budget to account for the movement in official exchange rates as advised by Central Agencies. This is consistent with Government policy as applied on a 'no win no loss' basis.

- **Scope Changes**

  Scope changes generally take the form of changes in quantities of equipment, changes in requirements that result in specification changes, or changes to services to be provided which are accompanied by a corresponding budget adjustment. These total budget adjustments are made in response to Government approved scope changes.

- **Transfers**

  Transfers occur when a portion of the project scope and budget is transferred to another project or sustainment product or to a Defence Group to deliver an element of project scope.

- **Budgetary Adjustments**

  Budgetary adjustments describe all other variations to the total project budget. These include administrative decisions that result in variations such as efficiency dividends to be harvested from project budgets or other DMO and defence industry initiatives, as well as other adjustments not factored into the original budget plan.

- **Budget Cost Savings**

  Cost savings attributed to any negotiated Foreign Military Sales or commercial contracts. These funds have been handed back to the Defence Portfolio.

2.9 Exchange variations are environmental factors over which the DMO has no control. In particular, foreign exchange is driven by the relative strength of the Australian economy against overseas economies.

2.10 For example, in 2011-12 the US dollar averaged 1.0421 against the Australian dollar compared to 1.005 in 2010-11. The Australian dollar also strengthened against the Euro moving from an average of 0.7253 Euro in 2010-11 to 0.7744 Euro in 2011-12. These variations account for most of the exchange rate variations in table 2.4.

2.11 Table 2.1 provides a summary of the project budget variations from date of Government approval and subsequent transfer to DMO variance attribute (i.e. price indexation; foreign exchange; and real variations). Significant real variations fall within three main groupings:

- **Scope changes:** Projects with the largest budget 'real variation' resulting from Government approved scope changes are:
  - Wedgetail (June 2004) – Increased from four to six aircraft;
  - MRH90 Helicopters (June 2006) – The significant budget increase is predominantly related to the scope increase from 12 to 46 helicopters for troop lift and maritime support capability to replace both the Black Hawk (Army) and Sea King (Navy) platforms. Additional facilities were also required in support of the MRH90 platform;
  - Hornet Upgrade (June 2001 - May 2007) – scope increased to include an upgrade to the aircrafts' electronic warfare self protection suite; (December 2004) scope decrease to remove Radio Frequency Jammer, (October 2003) scope increase to include Hornet Air Crew Training System, (June 2001) White Paper considerations;
  - Bushmaster Vehicles (May 2011) – vehicle numbers have increased from an initial 370 to 807 vehicles and trailers to equip the Enhanced Land Force, and acquire vehicles for the Overlander project. The vehicles have also been modified based on operational experience to provide additional protection to personnel;
  - HF Modernisation (May 2012) – Elements of the mobiles program not in contract were removed from the project scope as directed by Government;
  - Armidale Class (June 2005) – Patrol Boat numbers increased from 12 to 14;
  - Heavyweight Torpedo (March 2003) increased in scope to allow for acquisition of torpedoes from the US through an Armament Co-operative Project;

– Collins R&S (July 2001) – scope increased to reflect the full scope associated with the implementation of a reliable and sustainable platform; and

– Stand Off Weapon (May 2011) – Removal of the moving target capability from project scope.

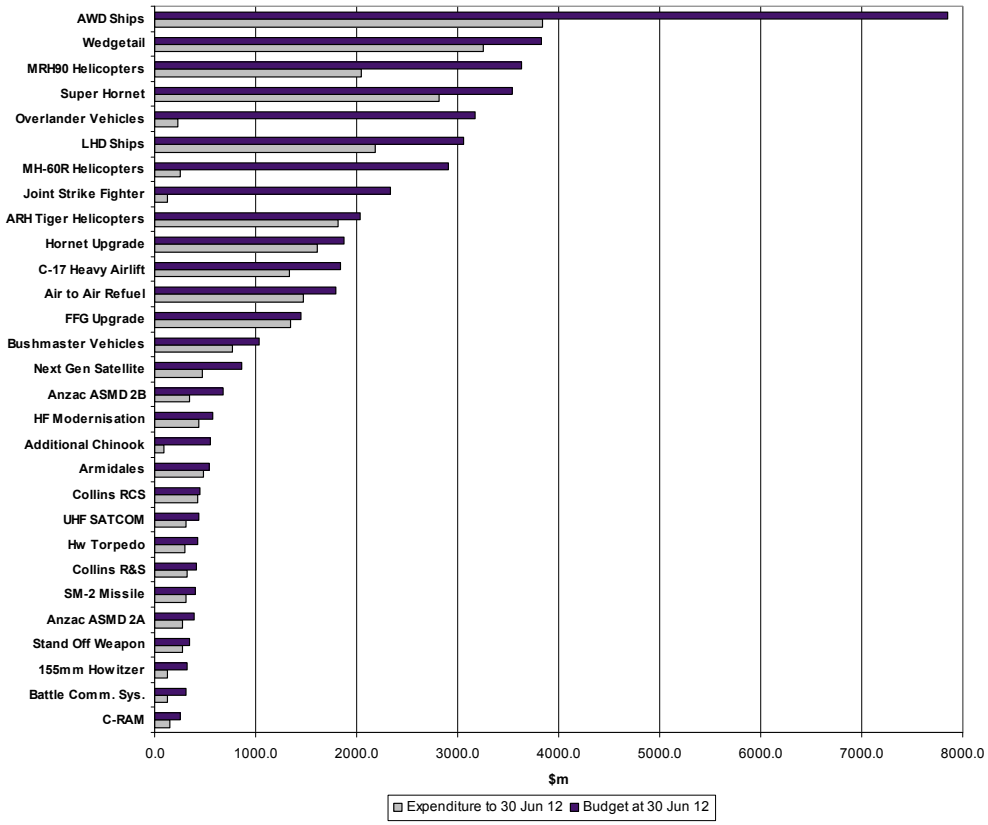
- **Transfers:** This year there was one transfer for SM-2 Missile project comprises of an $86.5m transfer to SEA 4000 Phase 3.2 Standard Missile 2 Conversion and Upgrade. In prior years there where significant transfers of the DMO budget made from the MRH90 Helicopters and Air to Air Refuel projects to the Defence Support Group to fund the acquisition of facilities. This reflects the practice of Defence Groups being allocated funds for the provision of services (for example facilities) at project approval, rather than those funds being allocated initially to the DMO, as well as payment by invoice rather than internal transfers. Previously there had also been a transfer from ANZAC ASMD Ph2A to ANZAC ASMD Ph2B to replace the initial Very Short Range Air Defence (VSRAD) with a phased array radar system.
- **Adjustments:** The SM-2 Missile project shows a budget adjustment of over $200m, with $120m in cost savings identified at the 2012-13 Portfolio Budget Estimates Review for return to the Defence Capability Program.

2.12 Figure 2.1 provides a comparison of expenditure as at 30 June 2012 compared to the total approved budget at that date. No project has exceeded its total approved budget. While this provides an indicator of project progress, the percentage of budget spent is dependent on the nature of the project and the level of early investment that may be required for project start-up and non-recurring engineering effort.

2.13 The relationship between project expenditure and project progress is not necessarily linear. The profile of expenditure against total approved budget is determined by several factors including the level of development and the type of acquisition. For example, a MOTS project acquired on a Foreign Military Sales (FMS) basis will generally have a linear expenditure pattern as FMS cases usually involve up-front quarterly payments. In comparison, a developmental project usually requires a degree of initial 'seed capital' on commencement with expenditure declining during the

development phase and increasing as the project shifts into the build/integration phase.

Figure 2.1 Comparison of Project Budget and Expenditure to Date (in $m)



2.14 Another key factor is the evolution of the project and its performance to date. Some projects may, for example, be well advanced but show a low level of expenditure against their total budget. This may result from poor contractual performance culminating in withholding of payments against specific milestones. This is, in effect, a deferral of payments that will be re-instated upon contractor achievement of milestones.

Schedule Performance

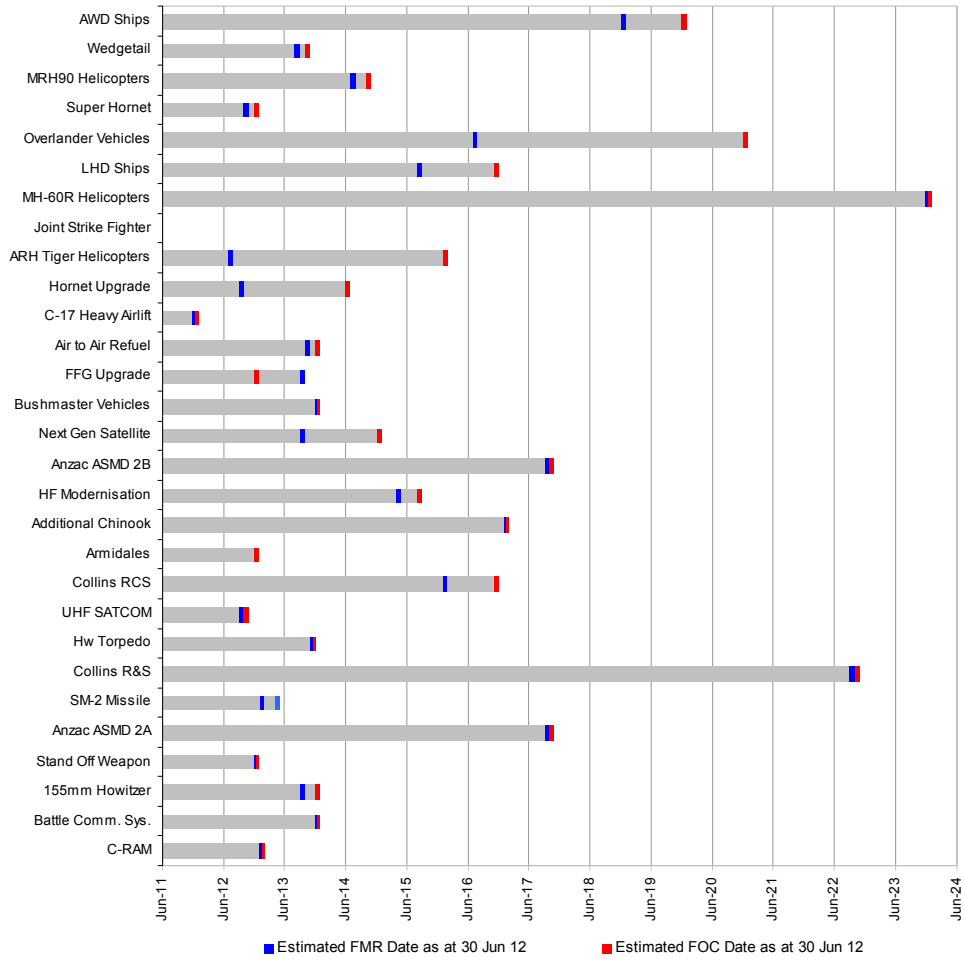
2.15 Defence introduced IMR and FMR as more appropriate milestones for measuring DMO acquisition performance in contributing to the Capability Managers' coordination of all other capability elements to achieve FOC. The period between FMR and FOC dates indicates the time required by Capability

Managers to bring together all the Fundamental Inputs to Capability elements, after the DMO has delivered the materiel elements of capability.

2.16 As the use of IMR and FMR matures, especially for new projects that enter the MPR with defined IMR and FMR milestones, schedule data will be presented on those milestones as well as the FOC milestones (and the relationship between FMR and FOC will become clearer). While FMR is generally expected to occur ahead of FOC, during the transition to the new milestones some anomalies were noted. For example Joint Strike Fighter does not have a defined FMR date whilst the Collins R&S project anticipates the Capability Manager declaring FOC ahead of DMO realising FMR at the completion of a docking cycle one month later. While this last example may seem an aberration, it is likely that this may happen for other new platforms or multi-platform upgrade projects where finalisation of some aspects of materiel acquisitions (e.g. spares or future updates to capability) may extend beyond FOC.

2.17 Figure 2.2 provides an indication of the estimated time required for Capability Managers to bring together all of the Fundamental Inputs to Capability following the final delivery of all key DMO deliverables.

Figure 2.2 – Current FMR and FOC Estimates



Notes:
1. Joint Strike Fighter has no defined FMR or FOC date.
2. UHF SATCOM has no defined FOC date but an indicative end date is shown.

2.18 Schedule analysis presented in previous reports was based on achievement or expected achievement of FOC. Figure 2.3 represents the schedule performance for each of the major projects covered in this year's MPR. The chart shows the original project approval date, the originally approved FOC estimate and the forecast FOC as at 30 June 2012.

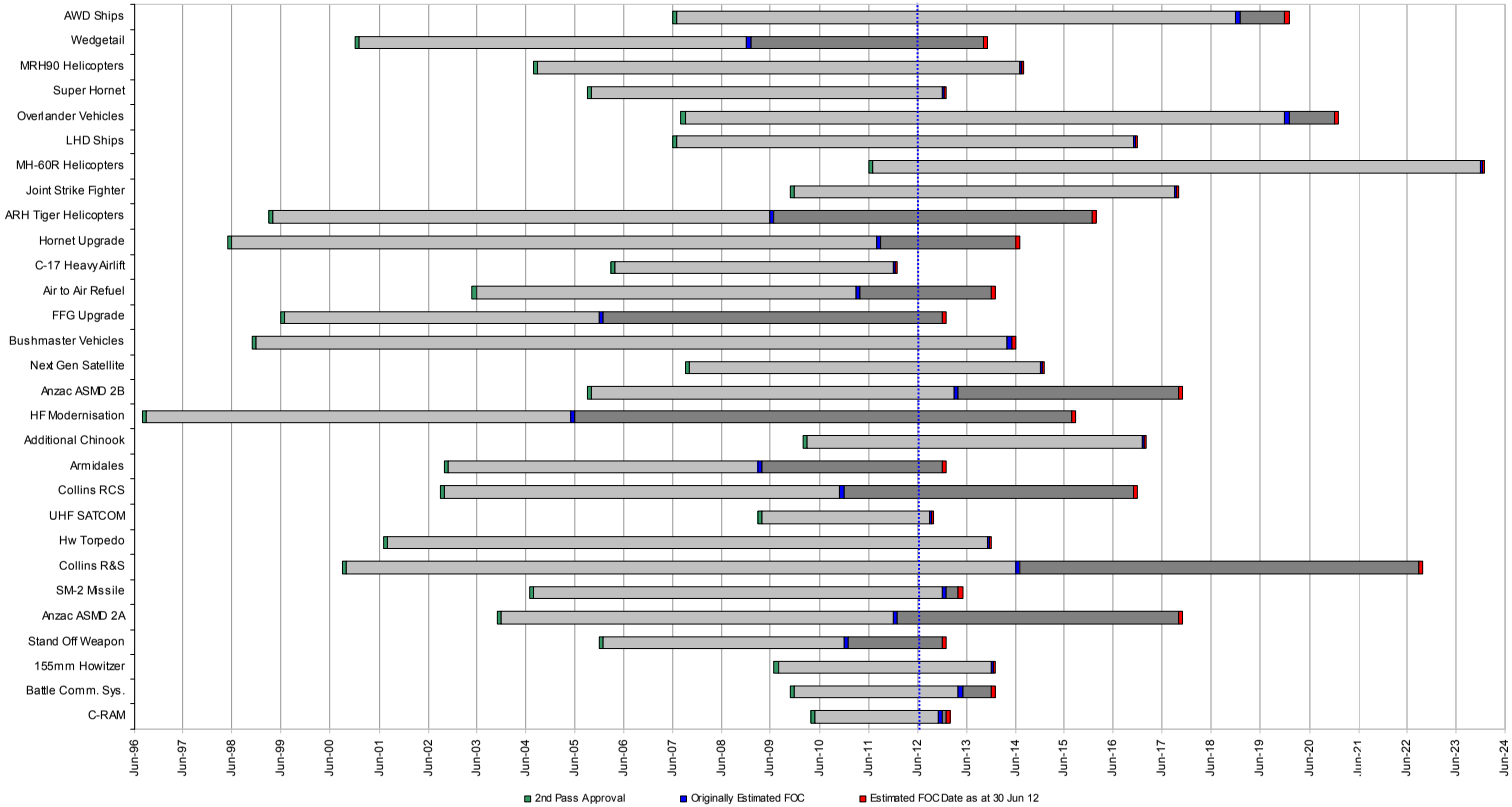
2.19 Implementation of the Kinnaird reforms in 2004 has delivered a marked improvement in schedule performance for Defence capability acquisition projects. As shown in the PDSS, average schedule variance for

pre-Kinnaird MPR projects is 61%, while the average variance for post-Kinnaird projects is 8%. This is influenced by the ages and stages of the projects, as well as a general shift to more off-the-shelf rather than developmental projects.

2.20 There was one project, C-17 Heavy Airlift, in the MPR that achieved FMR during the 2011-12 MPR with another seven scheduled to achieve FMR during 2012-13. Those projects are: Super Hornet, ARH Tiger Helicopters, FFG Upgrade, UHF SATCOM, SM-2 Missile, Stand Off Weapon and C-RAM.

2.21 There are six MPR acquisition projects currently scheduled to achieve FOC during 2012-13, which will result in the capabilities transitioning into the sustainment phase of the capability life cycle at that time. Those projects are: Super Hornet; FFG Upgrade; Armidales, SM-2 Missile; Stand-off Weapon and Counter-Rocket, Artillery and Mortar.

Figure 2.3 – Schedule from Approval to Current FOC Estimate



Notes:

1. Joint Strike Fighter and UHF SATCOM projects do not have a defined FOC date, however an expected end date is included to provide an indicative project timeframe.
2. The FFG upgrade project did not have an FOC date at approval so the estimated Operational Release date for the last upgraded vessel is used as an equivalent.
3. Government approval of PP4 included approval of a new FOC date, which masks what would have been a variance for the project up to PP3.

Effect of Kinnaird Reforms on Schedule

2.22 Splitting the 29 projects into pre and post Kinnaird reforms demonstrates the consequence of the reforms on Defence projects. Table 2.5 groups the projects into these two groups and presents an average to FOC schedule variance. As the table shows, pre-Kinnaird projects on average have a greater schedule variance

Table 2.5: Pre and Post Kinnaird Schedule Variance

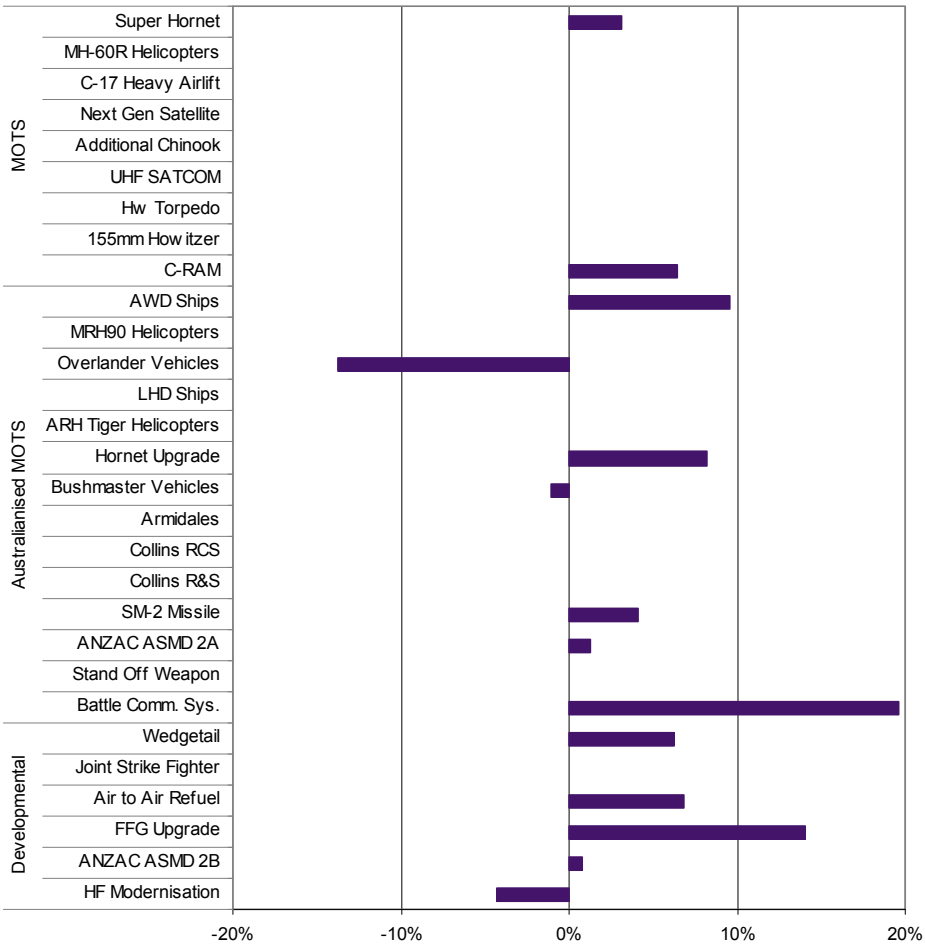
		FOC Variance as at 30 Jun 12	*In-year FOC variance*	*Variance Factor*	*FOC Variance as at 30 Jun 12*	*In-year FOC variance*	*Variance Factor*
Pre-Kinnaird	Wedgetail	60%	7%	1.60	56%	4%	1.56
	ARH Tiger Helicopters	64%	22%	1.64			
	Hornet Upgrade	21%	14%	1.21			
	Air to Air Refuel	35%	0%	1.35			
	FFG Upgrade	108%	8%	2.08			
	Bushmaster Vehicles	-2%	-2%	0.98			
	HF Modernisation	117%	-51%	2.17			
	Armidales	59%	9%	1.59			
	Collins RCS	73%	0%	1.73			
	Hw Torpedo	0%	0%	1.00			
	Collins R&S	60%	0%	1.60			
	Anzac ASMD 2A	72%	-1%	1.72			
Post-Kinnaird	AWD Ships	9%	0%	1.09	10%	2%	1.10
	MRH90 Helicopters	0%	0%	1.00			
	Super Hornet	0%	0%	1.00			
	Overlander Vehicles	8%	8%	1.08			
	LHD Ships	0%	0%	1.00			
	MH-60R Helicopters	0%	-	1.00			
	Joint Strike Fighter	N/A	N/A	N/A			
	C-17 Heavy Airlift	0%	0%	1.00			
	Next Gen Satellite	0%	0%	1.00			
	Anzac ASMD 2B	61%	-1%	1.61			
	Additional Chinook	0%	0%	1.00			
	UHF SATCOM	N/A	N/A	N/A			
	SM-2 Missile	4%	4%	1.04			
	Stand Off Weapon	40%	0%	1.40			
	155mm Howitzer	0%	0%	1.00			
	Battle Comm. Sys.	20%	20%	1.20			
	C-RAM	6%	-	1.06			

Schedule Variance

2.23 Figure 2.4 displays the variance of FMR as a percentage for each of the 29 projects in the MPR, noting that Joint Strike Fighter does not have a defined FMR. The Super Hornet attainment of FMR has slipped as it is awaiting the Capability Managers agreement of this achievement. This has however not affected the FOC forecast. The largest variance, 20% for the Battlefield Command System, reflects a delay of eight months associated with aligning the projects deliverables to Army's new brigade rotation cycle.

2.24 The reduction in FMR for Overlander is due to project rephasing the Medium-Heavy Capability into a new project.

Figure 2.4: Schedule Variance for FMR, by Project Type



2.25 Figure 2.5 charts the schedule variance as a percentage of the originally estimated project duration from Government approval to FOC. The projects are grouped in the categories of MOTS, Australianised MOTS (AMOTS) and Developmental. The chart shows that, generally, MOTS projects are more likely to deliver on time while AMOTS and Developmental acquisitions are more prone to underestimating technical complexity, platform unavailability and systems integration.

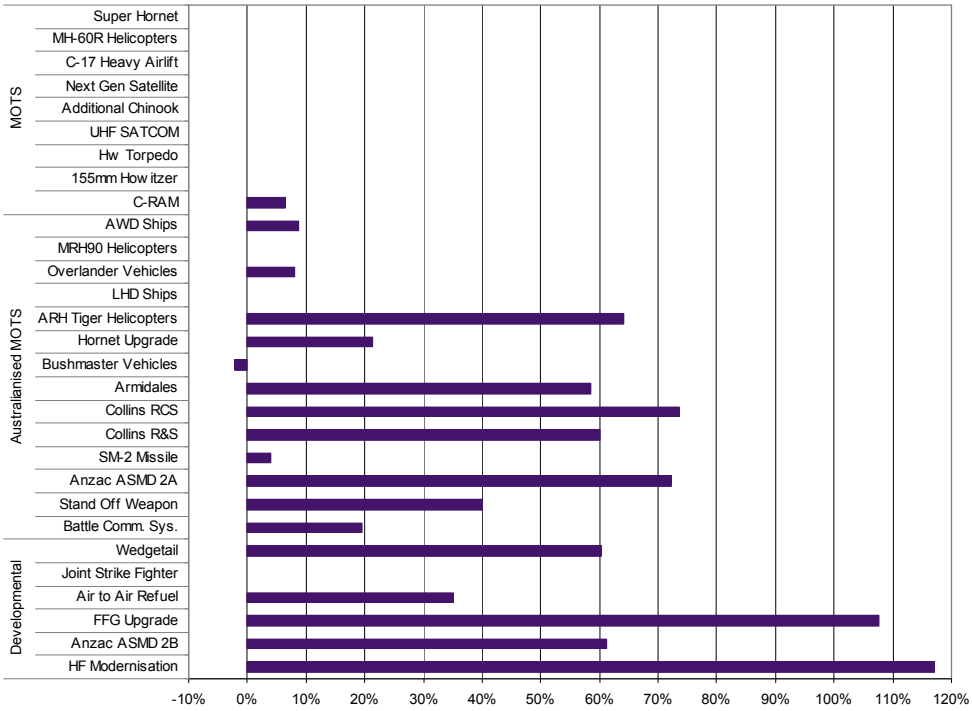
2.26 There is one anomaly in this chart with the Joint Strike Fighter having no formally defined FOC.

2.27 The number of projects reporting an FOC schedule variation of 50% or greater has increased from six to nine:

- ARH Tiger and Hornet Upgrade project delays are tied to the change in Capability Manager requirements with ARH Tiger expected to obtain FOC upon successful completion of sea trials on the LHD Ships while Hornet Upgrade with a further requirement to align HACTS with fleet aircraft, noting that this project has achieved FMR.
- Wedgetail, FFG Upgrade and HF Modernisation project delays are fundamentally due to an initial underestimation of project complexity. More specifically, the FFG Upgrade issues concerned the complexity of large platform integration; HF Modernisation underestimated the level of effort required to deliver the system, although the core capability was accepted in 2004; and Wedgetail has faced difficulties integrating the phased array radar and other mission critical elements into an operational system.
- The two Collins projects – Replacement Combat System (RCS) and Reliability and Sustainment (R&S) – have been affected by limited platform availability due to operational requirements and unscheduled maintenance requirements having a negative impact on the Full Cycle Docking program.
- Deferral of FOC for the Anzac Anti-Ship Missile Defence program (Phases 2A and 2B) resulted from a Government approved change of project delivery strategy and scope, including the decision to substitute the Very Short Range Air Defence System option with a 'phased array radar' capability. This is a significant capability advantage over the originally approved scope, and allowed leading edge Australian

technology to be proven in one ship before committing to the upgrade of the remaining seven ships.

Figure 2.5: Schedule Variance for FOC Since Government Approval, by Project Type

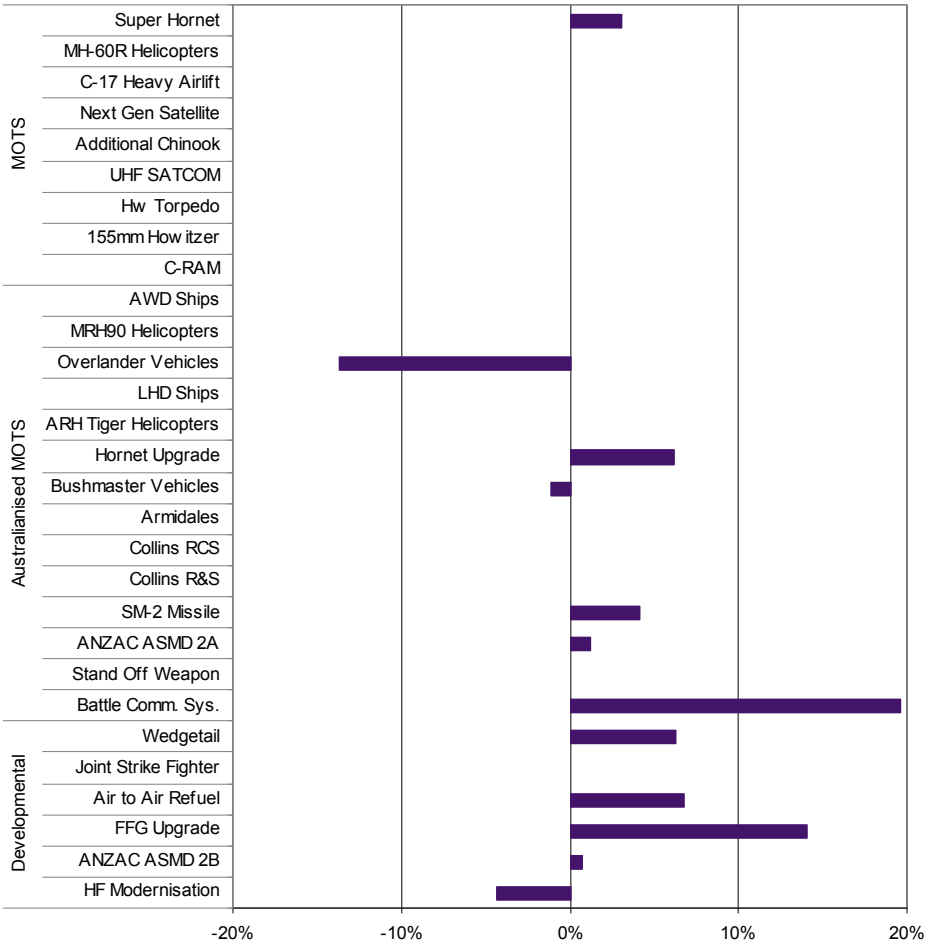


Note: Joint Strike Fighter is currently developmental in nature but should ultimately become MOTS when it enters production line delivery

In-year Schedule Variance

2.28 Figure 2.6 illustrates the in-year schedule variance for FMR as a percentage of the total time expected to reach the FMR milestone. In the 2011-12 MPR ten projects re-assessed their estimated FMR date. As identified in paragraph 2.26, the largest variance is 20%, Battlefield Command System which is to align the project's deliverables to Army's brigade rotation cycle, and Overlander due to project rephasing which decoupled the delivery of the light/light weight capability and the medium/heavy capability into two separate phases (LAND 121 Phase 3A and LAND 121 Phase 3B respectively).

Figure 2.6: In-year FMR Schedule Variance, by project type



2.29 Figure 2.7 shows in-year schedule variance of FOC, as a percentage of the 2010-11 MPR project duration estimate. In the 2011-12 MPR, 12 projects re-assessed their FOC date.

2.30 The largest in-year schedule variance is attributed to ARH Helicopters, Hornet Upgrade and Battlefield Command System projects which have had in-year schedule variances exceeding 10 per cent.

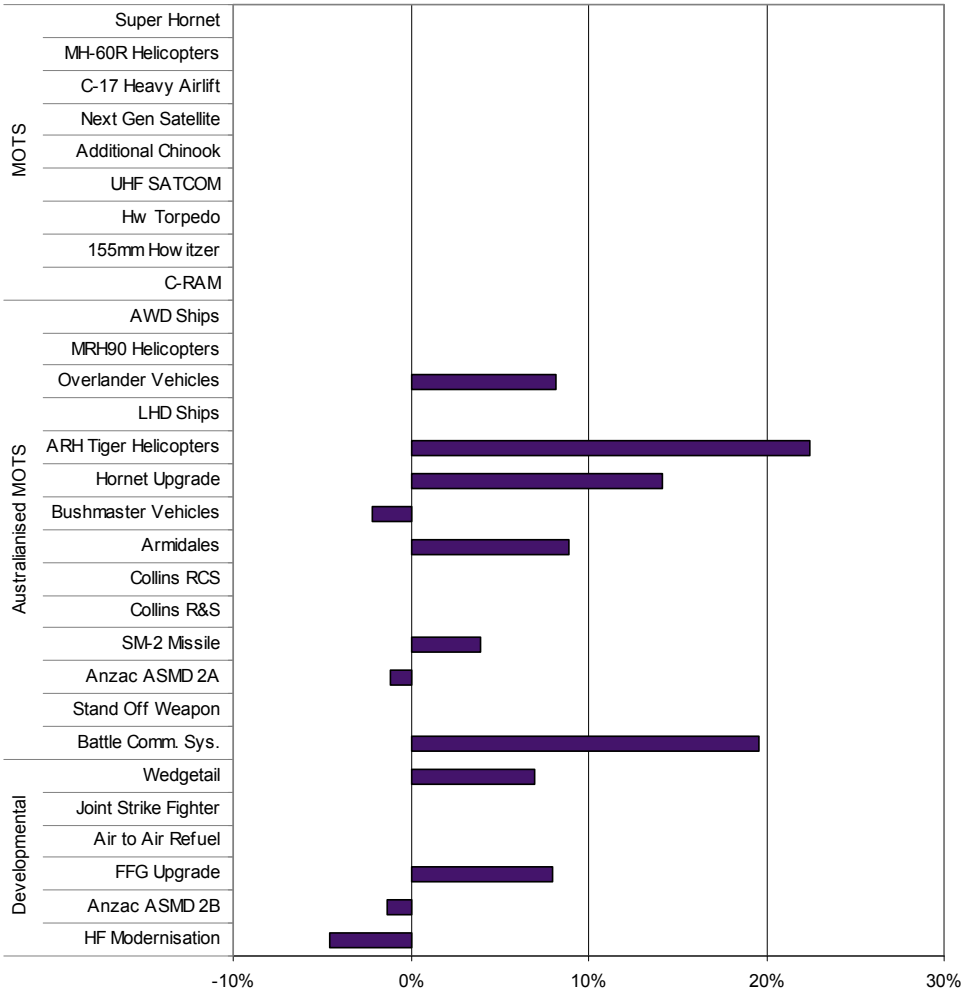
2.31 Overlander Vehicles estimate to FOC has reduced due to the decision to split the Medium-Heavy component into a separate phase.

2.32 Although the large variation for Battlefield Command Systems is 20%, the actual time to reach FOC has extended by only eight months due to the

decision by the Capability Manager to better align the FOC with the Army Brigade Rotation cycle.

2.33 Of the eight projects with 50% or more schedule variance since original approval, five have reassessed their schedules again since the 2010-11 MPR. Wedgetail, ARH Tiger and FFG Upgrade projects have increased their forecast date for FOC whilst Anzac ASMD 2A and Anzac ASMD 2B projects have regained some schedule slippage.

Figure 2.7: In-year FOC Schedule Variance, by project type



Note: Joint Strike Fighter is currently developmental in nature but should ultimately become MOTS when it enters production line delivery.

Schedule Variance Factor

2.34 Figure 2.8 charts the schedule variance as a ratio of the duration of the project as forecast at 30 June 2012 to the originally estimated duration of the project. A 'schedule variance factor' of less than one means the project delivered or is forecast to deliver ahead of the originally estimated schedule. A factor of one means the project has delivered or is forecast to achieve the originally estimated schedule. A factor greater than one means the project has delivered or is forecast to deliver later than originally estimated. Joint Strike Fighter and UHF SATCOM projects do not have a defined FOC date and are therefore not included in the calculations for analysis of FOC schedule variance.

2.35 Sixteen of the remaining 28 projects in the 2011-12 MPR show a schedule variance factor greater than one, whilst eleven are tracking on schedule. Overall in 2011-12, the average schedule variance across all projects is 1.30.

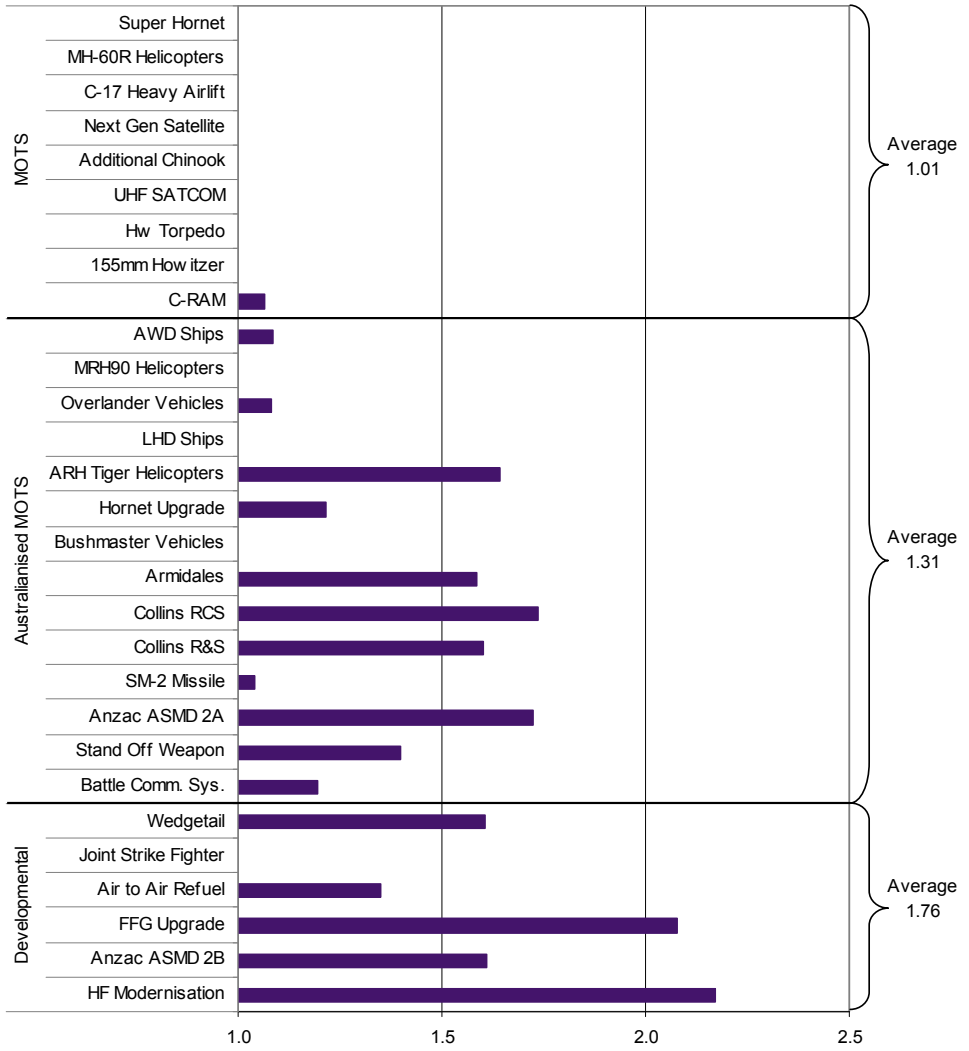
2.36 Detailed information regarding the cause and extent of slippage for each project is contained within the individual PDSS in Part 3; Table 2.6 later in this chapter provides a synopsis of causes for schedule delays.

2.37 The previously mentioned linkage between the three main types of acquisition (MOTS, Australianised MOTS and Developmental) and schedule variance is reinforced in Figure 2.8, where developmental projects show an average variance of 1.76 compared to Australianised MOTS of 1.31 while MOTS show an average of 1.01. This reflects that the higher the degree of systems development/modification and integration, the higher the schedule risk associated with the project.

2.38 The one MOTS project with schedule delay, C-RAM, reflects the Capability Managers decision to align the delivery of the Giraffe Agile Multi Beam radar to Australia with military air transport availability.

2.39 While the analysis indicates schedule slippage for the declaration of Final Operating Capability, it should be noted that often major capability elements of these projects are already in use by the ADF. For example major capability elements of the HF Modernisation project have been in use since 2004 and similarly the Armidale patrol boats have been in use since 2005.

Figure 2.8: FOC Schedule Variance Factors, by project type



Notes:

1. Joint Strike Fighter is currently developmental in nature but should become MOTS when it enters production line delivery.
2. Joint Strike Fighter and UHF SATCOM were not included in calculation of averages as they do not have a defined FOC.

Schedule Variance Attribution

2.40 Slippage for developmental and Australianised MOTS projects is attributable to the higher levels of technical complexity and system integration risk. As this report has shown, the higher the technical challenge, the higher the inherent risk to the schedule. Developmental projects are new and often at

the leading edge of available technology. As such, it is not uncommon for projects to encounter unforeseen technical difficulties requiring significant modification that results in delay. Similarly, Australianisation can also encounter unforeseen technical difficulties and have an unanticipated impact on existing features of the baseline MOTS product. Rectifications of such issues often require extensive, time consuming remediation work.

2.41 Further analysis for the 2011-12 MPR has revealed additional drivers of schedule delays as shown in Table 2.6. Of the 10 projects that underestimated technical complexity, five could also identify some overestimation of industry capability and performance, and another two were also affected by approved changes to scope (Anzac ASMD 2A and 2B attained Government approval to acquire the more capable 'Phased Array Radar' based solution over the original 'Very Short Range Air Defence System' solution, though without an increase to schedule). Industry capability and performance delayed the AWD project and limited platform availability was the primary driver for delays of Collins class submarine projects. Measures to stabilise the Full Cycle Docking program should assist with future scheduling.

2.42 Two projects have a greater schedule delay as a result of Capability Manager decisions tying the project equipment to expected capability outcomes or operational imperatives.

Table 2.6 – Attribution of Schedule Variance Factors

Driver of Schedule Variance	Project
Platform availability	Collins RCS
	Collins R&S
Industry Capability	AWD
Technical complexity – underestimation by industry and/or Defence of the complexity of developmental and/or large scale integration projects.	HF Modernisation
	FFG Upgrade
	Wedgetail
	Armidales
	Stand Off Weapon
	Air to Air Refuel
	ARH Tiger Helicopters
	Hornet Upgrade
Technical complexity and Scope Change	Anzac ASMD 2A
	Anzac ASMD 2B
Capability Manager Decisions	Battle Comm. Sys.
	C-RAM

Materiel Capability Performance

2.43 Materiel Capability Performance measures represent the key materiel capability performance attributes of a project, which if not satisfied could have a significant detrimental effect on the eventual suitability of equipment for operational service. The Materiel Capability Performance measures for each project, as defined in the MAA, are identified from the project approval documentation that details the capital equipment assets to be delivered, including the Operational Concept Document and the Function and Performance Specification.

2.44 For security classification reasons the MPR does not identify the individual Materiel Capability Performance measures for each of the projects; however, each PDSS has a percentage breakdown on how the project is

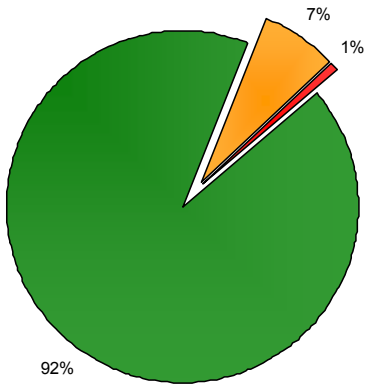
tracking against its particular suite of Materiel Capability Performance measures.

2.45 The traffic lights, based on a subjective assessment, indicate:

- **Green:** Materiel Capability Performance measures for which there is a high level of confidence that they will be met;
- **Amber:** Materiel Capability Performance measures that are under threat but still considered as manageable and able to be met; and
- **Red:** Materiel Capability Performance measures that at this stage are unlikely to be met.

2.46 For the 2011-12 DMO MPR, there are 230 individual Materiel Capability Performance measures across 29 projects with 213 green, 15 amber and two red. Materiel Capability Performance measures indicate the status of the materiel element of capability against scheduled milestones as at 30 June 2012 and is not indicative of each project's ability to deliver the intended scope at the end of the project.

Figure 2.9 – Materiel Capability Performance measures for the 2011-12 Report



2.47 From the analysis of Materiel Capability Performance Measures, as at 30 June 2012 and as noted in Figure 2.11, the following explanation is provided:

- **Green** – A high percentage (92%) of green Materiel Capability Performance measures reported;
- **Amber** – The amber Materiel Capability Performance measures (7%) are reported across six projects. Details include:
  - Wedgetail – performance shortfalls and technical difficulties are adversely affecting the transition into operational service and sustainment;
  - MRH90 Helicopters – resolution of engineering and reliability issues may affect achievement of planned IMR and FMR;
  - ARH Tiger Helicopters – delays in the delivery of some spares, and support and test equipment;
  - Air to Air Refuel – aircraft have been accepted in an initial configuration providing a level of air to air refuelling capability. Further testing and acceptance of the Aerial Refuelling Boom System is required along with the successful remediation of all non-conformances;
  - FFG Upgrade – The entire upgraded FFG capability Underwater Warfare System acceptance issues and support requirements and the requirement for a Mk92 MOD 12 Fire Control Suite test bed and training facility, this is to be reviewed by Navy. Proceeding with this requirement will extend FMR/FOC to at least 2014;
  - Collins Phase 3 – The Special Forces Exit and Re-entry safety modification to one vessel has been delayed to reduce the impact on the maintenance schedule. This modification will be installed during the next maintenance availability;
  - FOSOW – Missile production has now resumed with the fuze issue being resolved and deliveries are scheduled to meet FMR/FOC timelines. Production and installation of Precision Strike Targeting Local Area Network is on schedule for FMR/FOC but is being closely monitored due to developmental nature of the network. Explosive Ordnance storage facilities are available to meet FOC storage requirements with alternate arrangements being developed for one of the facilities due to required rectification actions; and

- 155mm Howitzer – The acquisition of Course Correcting Fuse (CCF) is an issue which is expected to impact the major milestones. The capability will be subject to further testing to resolve reliability issues, prior to the US Government agreeing to a production milestone. A decision to progress the acquisition of CCF under this phase of Land 17 will be made by December 2012. The projects dependency on JP2085 Phase 1B whose scope includes the integration of Advanced Field Artillery Tactical Data System into vehicles to allow greater interoperability with ADF battle systems.

- **Red** – The red Materiel Capability Performance measures (1%) relate to:
  - Wedgetail project – performance deficiencies in critical elements of the mission system currently pose a risk to the achievement of FMR with most deficiencies expected to be remediated before final delivery, but some radar deficiencies will remain at final delivery; and
  - MRH 90 Helicopters – it is highly likely that the first maritime and land operational capabilities will not be achieved by the scheduled date due to the non delivery of conforming supplies.

Contingency Management

2.48 In keeping with standard commercial practice, cost estimates for major Defence capital investment programs include a contingency provision that allows Project Managers the facility to retire risk and treat risk events that have materialised into an issue, without the administrative burden of returning to Government for re-approval in each instance. Contingency funding provides a financial safeguard for Project Managers against the inherent uncertainties, risks or unexpected events that may arise during the course of the project. It is especially important in defence projects that typically have greater inherent risk, longer timeframes and are more complex than other commercial projects.

2.49 To 30 June 2012, of the total contingency allocated across the 29 projects, approximately $1.1b (or 2.3% of the total approved project budget of $47.3b) has been applied to retire project risks. The areas where risk has been retired using project contingency budgets include:

- Systems development;
- Systems integration;

- Logistics and Support;
- Schedule constraints; and
- Project resourcing.

Earned-Value Management

2.50 Earned Value Management (EVM) is a project performance management methodology that integrates scope, schedule and budget to establish a baseline against which performance is measured. Earned Value Management may also be used as a means by which progress payments may be quantified.

2.51 Payment by Earned Value implements progress payments using an objective measure, Earned Value, to quantify progress and represents only one of the payment options that may be considered by Project Managers to develop contract payment schedules.

2.52 Earned Value Payments, like progress payments, primarily address the cash flow required by the contractor to deliver the outcomes of the contract. Earned Value Payments provide for contractors to be paid progressively for work performed with the security that progress payments will be based on objective measures of performance defined as part of the Earned Value Management System (EVMS). Sixteen of the 29 MPR projects are either currently using or have used EVM as a payment, contract management method or tool. EVMS provides one approach to measure project performance. Depending on the nature of the project, other metrics can provide similar or improved insights into project performance.

2.53 DMO's preferred payment approach for major capital acquisition projects is through milestone payments, as this is a more appropriate way of ensuring the delivery of goods and services as specified in the contract.

Part 3. Auditor-General's Independent Review Report, Statement by the CEO DMO and Project Data Summary Sheets

Independent Review Report by the Auditor-General on the Defence Materiel Organisation's Project Data Summary Sheets

To the President of the Senate
To the Speaker of the House of Representatives

Scope

The review of the accompanying 29 Project Data Summary Sheets (PDSSs) as at 30 June 2012, including the Statement by the CEO DMO, was undertaken as a 'priority assurance review' under sub-section 19A(5) of the *Auditor-General Act 1997* (the A-G Act).

My review is designed to provide assurance that the information contained in each PDSS has been prepared in accordance with the DMO 2011–12 MPR Guidelines (the Guidelines), as endorsed by the Joint Committee of Public Accounts and Audit. The 29 projects are listed in Attachment A.

My review encompassed the information in each PDSS, including the cost, schedule performance, and capability delivered against contracted requirements, but did not include an assessment of the following information, which is outside the scope of the review, set out in the Terms of Engagement, agreed with the CEO DMO:

(a) Section 1.2 Current Status—Cost Performance (project financial assurance statement);

(b) Section 1.3 Project Context—Major Challenges, Section 6.1 Major Project Risks, and Section 6.2 Major Project Issues;

(c) Section 5.1 Measures of Materiel Capability Performance; and

(d) 'Forecasts' of future dates regarding a project's expected achievement of delivery schedules and capability where included in Sections 1 and 3 of each PDSS.

The above information has not been included in the scope of the review because by their nature, the identification of Major Challenges, Project Risks and Issues and the achievement of future outcomes (the project financial assurance statement and Measures of Materiel Capability Performance) and forecast future dates relate to events and depend on circumstances that have not yet occurred, may not occur, or have occurred but have not yet been identified. Accordingly, the conclusion of this review does not provide any assurance in relation to this information.

The Responsibility of the Chief Executive for the Project Data Summary Sheets

The Chief Executive Officer of the DMO is responsible for the preparation and presentation of the unclassified PDSSs for the 29 projects outlined in the scope, in accordance with the Guidelines. This responsibility includes ensuring the completeness and accuracy of each project's cost and schedule performance, and capability delivered against contracted requirements, in each PDSS.

The Auditor's Responsibility

My responsibility is to express an independent conclusion based on my review.

My review has been conducted in accordance with the Australian Standard on Assurance Engagements, ASAE 3000 *Assurance Engagements Other than Audits or Reviews of Historical Financial Information* issued by the Australian Auditing and Assurance Standards Board. My review is designed to enable me to obtain sufficient appropriate evidence to form a conclusion on whether anything has come to my attention to indicate that the information and data in the PDSSs that is within the scope of my review has not been prepared, in all material respects, in accordance with the Guidelines.

Independence

In conducting the review, I have followed the independence requirements of the Australian National Audit Office, which incorporate the requirements of the Australian accounting profession.

Review criteria and methodology

The criteria that have been used to conduct my review are based on the Guidelines and include whether the DMO has procedures in place designed to ensure that project information and data was recorded in a complete and accurate manner for each project.

I have conducted the review of the PDSSs, as explained in the above **Scope** section, for the 29 projects by making such enquiries and performing such procedures as I, in my professional judgement, considered reasonable in the circumstances including:

- an examination of each PDSS;
- a review of relevant processes and procedures used by the DMO in the preparation of the PDSSs;
- an assessment of the systems and controls that support project financial management, risk management, and project status reporting;
- a review of documents and information relevant to the PDSSs;
- interviews with persons responsible for the preparation of the PDSSs and those responsible for the management of the 29 projects;

- taking account of industry contractor comments provided to the DMO on draft PDSS information;
- assurance by the DMO managers attesting to the accuracy and completeness of the PDSSs;
- an examination of confirmations provided by the Secretary of the Department of Defence and Chief of the Defence Force, from the Capability Managers, relating to each project's progress toward Initial and Final Materiel Release, and Initial and Final Operational Capability;
- an examination of the management representations by the Chief Finance Officer of the DMO and supporting project financial assurance statements; and
- an examination of the statement and management representations by the Chief Executive Officer of the DMO.

A review of this nature provides less assurance than an audit.

Conclusion

Based on my review described in this report, nothing has come to my attention that causes me to believe that the information in the PDSSs within the scope of my review has not been prepared, in all material respects, in accordance with the Guidelines.

Ian McPhee
Auditor-General

Canberra ACT
6 December 2012

Attachment A

List of Projects

- Air Warfare Destroyer Build - SEA 4000 Phase 3
- Airborne Early Warning and Control Aircraft - AIR 5077 Phase 3
- Multi-Role Helicopter - AIR 9000 Phase 2/4/6
- Bridging Air Combat Capability - AIR 5349 Phase 1/2
- Field Vehicles and Trailers - LAND 121 Phase 3
- Amphibious Ships (LHD) - JP 2048 Phase 4A/4B
- Future Naval Aviation Combat System Helicopter - AIR 9000 Phase 8
- New Air Combat Capability - AIR 6000 Phase 2A/2B
- Armed Reconnaissance Helicopter - AIR 87 Phase 2
- F/A-18 Hornet Upgrade - AIR 5376 Phase 2
- C-17 Globemaster III Heavy Airlifter - AIR 8000 Phase 3
- Air to Air Refuelling Capability - AIR 5402
- Guided Missile Frigate Upgrade Implementation - SEA 1390 Phase 2.1
- Bushmaster Protected Mobility Vehicle - LAND 116 Phase 3
- Next Generation SATCOM Capability - JP 2008 Phase 4
- ANZAC Anti-Ship Missile Defence - SEA 1448 Phase 2B
- High Frequency Modernisation - JP 2043 Phase 3A
- Additional Medium Lift Helicopters - AIR 9000 Phase 5C
- Armidale Class Patrol Boat - SEA 1444 Phase 1
- Collins Replacement Combat System - SEA 1439 Phase 4A
- Indian Ocean Region UHF SATCOM - JP 2008 Phase 5A
- Replacement Heavyweight Torpedo - SEA 1429 Phase 2
- Collins Class Submarine Reliability and Sustainability - SEA1439 Phase 3
- SM-1 Missile Replacement - SEA 1390 Phase 4B
- ANZAC Anti-Ship Missile Defence - SEA 1448 Phase 2A
- Follow On Stand Off Weapon - AIR 5418 Phase 1
- Artillery Replacement - LAND 17 Phase 1A
- Battlefield Command Support System - LAND 75 Phase 3.4
- Counter-Rocket Artillery and Mortar - LAND 19 Ph 7A

Statement by the CEO DMO

The attached Project Data Summary Sheets (PDSSs) for the 29 major projects included in this report have been prepared in accordance with Guidelines developed by the DMO in consultation with the Australian National Audit Office (ANAO) and endorsed by the JCPAA.

Project Status as at 30 June 2012

In my opinion, the Project Data Summary Sheets comply in all material respects with the Guidelines and reflect the status of the projects as at 30 June 2012. In stating this opinion, and in agreement with the ANAO, I acknowledge that the following sections of each PDSS are not covered in the scope of the Auditor-General's assessment:

- Section 1.3 Major Challenges, Section 5 Materiel Capability Performance, Section 6.1 Major Project Risks, Section 6.2 Major Project Issues; and
- Future dates that are 'forecasts' regarding a project's expected achievement of delivery schedules and capability where included in Sections 1 and 3 of each PDSS.

Significant Events Occurring Post 30 June 2012

In stating this opinion, I acknowledge the following material events have occurred post 30 June 2012:

SEA 4000 Phase 3 Air Warfare Destroyer

- On the 6th September 2012, Minister Smith and Minister Clare announced a re-baselining of the Air Warfare Destroyer (AWD) construction schedule following extensive consultation with Australia's shipbuilding industry and the Navy. The AWD Alliance has conducted a detailed analysis of the construction schedule and advised Defence that the keel to keel interval should be extended to 18 months between each ship. The re-baselined schedule delivery dates are: HMAS Hobart (AWD01) – March 2016; HMAS Brisbane (AWD02) – September 2017 and HMAS Sydney (AWD03) – March 2019.

AIR 5077 Phase 3 Wedgetail

- The Interoperability Assessment with the US Pacific Air Force was completed during Exercise Rim of the Pacific (RIMPAC), held in Hawaii in July 2012.

- The Airworthiness Board decided at its meeting on 26 September 2012 to recommend to the Defence Aviation Authority that Australian Military Type Certification and Service Release (AMTC/SR) be awarded for the E-7A Wedgetail aircraft.
- On 19 November 2012 Minister for Defence Materiel Jason Clare announced that the Airborne Early Warning & Control (AEW&C) project has achieved Initial Operational Capability.

AIR 9000 Phase 2 Multi-Role Helicopter

- DMO is conducting negotiations with the prime contractor to settle a number of commercial, technical and scheduling issues, including compensation for late deliveries. Following the finalisation of these negotiations DMO will undertake a review of the project budget, including levels of contingency.

AIR 6000 Phase 2A/2B Joint Strike Fighter

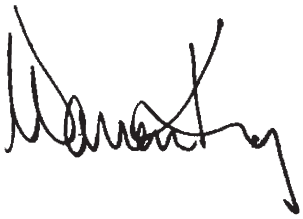
- In July 2012 an addition of $204.4m to the projects budget to reverse a budget decrease applied in May 2012.

SEA 1444 Phase 1 Armidale Class Patrol Boats

- On 5 September 2012, the Chief of Navy declared the Final Operational Capability for the Armidale Class Patrol Boats.

AIR 5418 Phase 1 Follow-on Stand Off Weapon

- The Final Operational Capability forecast for December 2012 will not be achieved and is under review pending advice from the United States Air Force.



Mr Warren King

Chief Executive Officer

5 December 2012

Project Data Summary Sheets

Project Data Summary Sheets

Project Data Summary Sheet[232]

Project Name	**AIR WARFARE DESTROYER**
Project Number	**SEA 4000 Phase 3**
Capability Type	New
Service	Royal Australian Navy
Government 1st Pass Approval	May 05
Government 2nd Pass Approval	Jun 07
Total Approved Budget (Current)	**$7,853.1m**
2011-12 Budget	**$695.4m**
Project Stage	Critical Design Review
Complexity	ACAT I

Section 1 – Project Summary

1.1 Project Description

This project will acquire three *Hobart* Class Air Warfare Destroyers (AWD) and their support system for the **Australian Defence Force** (ADF). The capability provided by the AWDs will form a critical element of the ADF's joint air warfare defence capability and will contribute to a number of other joint warfare outcomes.

1.2 Current Status

Cost Performance

Notwithstanding the issues disclosed at Section 6.2, as at 30 June 2012, project SEA 4000 Phase 3 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

[232] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

Schedule Performance

In response to delays in hull block fabrication, the AWD Alliance acted to limit a potential two year slippage in the completion of HMAS Hobart by up to 12 months. Two key actions were an initial reallocation of hull blocks among Australian shipyards in December 2010, followed by a further reallocation of blocks between the Australian shipyards and Navantia in May 2011 **for ships 1 and 2. Further reallocation of blocks for ship 3 was announced in March 2012.**

Since July 2011, the following major events and activities have occurred:

- **All 17 major combat system ships equipment procurements under contract in July 2011.**
- **All 3 ship sets of MK 45 Gun Mounts and Loader Drums arrived in Adelaide in July 2011.**
- **First delivery of blocks from BAE arrived in the ASC Shipyard in August 2011.**
- **All 165 major platform system ships equipment procurements under contract August 2011.**
- **First delivery of Australian Tactical Interface (ATI) equipment arrived at the land based integration facility in Sydney in September 2011.**
- **Commenced fabrication on Ship 2 at Navantia in October 2011.**
- **Vertical Launch System equipment for Ship 01 arrived in Adelaide in October 2011.**
- **First installation of electrical cables in Ship 01 in February 2012.**

Materiel Capability Performance

All significant government specified capability is currently planned to be achieved and in some warfare areas, the capability will be exceeded. However, Electronic Warfare Radar – Electronic Attack sub-system procurement has been deferred as current technology does not meet the contract and Royal Australian Navy (RAN) requirements. The budget has been preserved to support second generation technology being fielded in the AWD. It is expected that the capability will be available in the 2017-18 timeframe. Decisions made by the program in conjunction with the Capability Manager will ensure that AWD is delivered with the expected capability and affordable cost of ownership; and within the acquisition budget and schedule.

1.3 Project Context

Project	Explanation
Background	In May 2005 the Government granted first pass approval to the Program, allowing commencement of Phase 2, the Design phase. Phase 2 oversaw the development of two platform designs: • The 'Existing' design based upon a modified version of the Navantia designed and built F-100 warship as the Australianised military off-the-shelf option; and • The 'Evolved' design produced by Gibbs & Cox developed from an in-house design utilising design features of the US Navy class of Aegis Guided Missile Destroyers. In May 2005, the Government selected ASC AWD Shipbuilder Pty Ltd as the shipbuilder for the AWD Program and determined that the ships should be built in Adelaide. Raytheon Australia Pty Ltd was chosen as the Combat System Systems Engineer. In October 2005, Defence sought and received Government approval to acquire three Aegis Weapon Systems to provide the core air warfare capability of the AWD. The Commonwealth subsequently entered into a United States (US) Foreign Military Sales (FMS) agreement for the acquisition of the Aegis weapons system comprising: • Three Aegis Weapon System sets, and • Associated engineering services and integrated logistic support. In June 2007, at Second Pass, the Government granted approval to commence construction of the *Hobart* Class Air Warfare Destroyer utilising the existing design. This decision initiated the current phase of Project Sea 4000 Phase 3, the construction phase. Phase 3 includes detailed design, procurement, ship construction, and set to work of the Aegis Combat System and the F-100 based Platform Systems. This culminates in the delivery of three *Hobart* Class AWDs together with the ships support systems including initial spares and ammunition outfits, and initial crew training. Phase 3 concludes with the delivery to the RAN of the third AWD, HMAS *Sydney* At Second Pass, the Government approved Defence's proposal to close Sea 4000 Program Phase 2, Design, and Phase 3.1, Aegis acquisition activities, and combine the remaining

	Phase 2 and Phase 3.1 scope and funding with Sea 4000 Program Phase 3.
Uniqueness	The Sea 4000 Air Warfare Destroyer Program is currently one of Australia's largest and most technically complex Defence projects. The AWDs will be the RAN's first Aegis equipped ships and will be the most modern version of Aegis installed in a non US Navy ship. The AWDs are being delivered through an Alliance based contract arrangement involving ASC AWD Shipbuilder, Raytheon Australia and the Commonwealth, represented by the DMO. The Alliance based contract arrangement is described in greater detail in the "Contractual Framework" Section.
Contractual Framework	The Alliance based contract arrangement was signed in October 2007. Key features of the AWD Alliance and the operations of the Alliance based contract arrangement include: • The Alliance Industry Participants (Raytheon Australia and ASC AWD Shipbuilder) are jointly and severally responsible for the delivery of the three ships and their support systems. Each party remains individually responsible for compliance with all statutory requirements. • The Alliance is neither a legal body, nor a joint venture. • The legal and commercial basis for the Alliance is established through **the Alliance Based Target Incentive Agreement** (ABTIA) contract signed by all three participants. This establishes a virtual organisation under the governance of the AWD Alliance Board. • All participants have a shared commercial interest in the outcome of the Program through pain share/gain share arrangements. The Industry Participants fee is at risk if performance is poor, however, they can benefit from delivery ahead of schedule and / or under budget. • The Commonwealth retains "step in" rights to protect the national interest and the unilateral right to determine strategic issues relating to the Program. • Liquidated Damages may apply in the event any ship is delivered later than specified dates. • Risk is managed through the allocation of management reserve. • All financial accounting is on an "open book" basis. The Commonwealth entered into a Platform System Design contract with Navantia, the ship designer, in October 2007. This contract is managed by the AWD Alliance under the Alliance based contract arrangement. The Aegis combat system is being procured by the Commonwealth under the FMS agreement with the US Navy. This agreement is also managed within the AWD Alliance project team. While Navantia and the US Navy (and its equipment supplier, Lockheed Martin) are not part of the Alliance, they work closely with the Alliance and are treated in an alliance like manner.
Major Challenges.	The major challenges the project faces are: • Achieving peak hull production capacity, recruiting and training people to meet this peak workforce demand and stabilising workflow in order to achieve maximum shipbuilding productivity. • Achieving timely delivery of items being manufactured by sub contractors for the Alliance participants, from multiple locations within Australia and around the world. • Delivering an appropriately structured support system to enable the ships to be effectively and efficiently sustained through life. • Stability of the production baseline documentation from the **Platform Designer,** (PSD), Navantia. • **Managing production change and disruptions efficiently and effectively in a 3 ship build program**.
Other Current	**SEA 4000 Phase 3.2 – Standard Missile SM-2 Missile conversion and upgrade. The conversion of the missiles will allow them to be used in the Air Warfare Destroyers**

Projects/Sub-Projects	**and provide an enhanced anti-aircraft and anti-ship missile defence capability.**

1.4 Linked Projects

Project	Description of Project	Description of Dependency
AIR 9000 Phase 8 - Future Naval Aviation Combat System	**The project will acquire 24 MH-60R Seahawk naval combat helicopters, associated weapons and support systems. The aircraft will provide Navy with a contemporary helicopter with anti-submarine warfare and anti-surface warfare capability.**	**Hangar facility and weapon magazine modifications to support the integration of the replacement Naval helicopter MH-60R.**

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Nov 03	Original Approved		7,207.4	
Jul 10	Price Indexation		1,173.2	1
Jun 12	Exchange Variation		**(527.5)**	
Jun 12	**Total Budget**		**7,853.1**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – AWD Alliance	**(1,629.7)**		
	Contract Expenditure – Navantia	**(341.2)**		
	Contract Expenditure – US Government	**(911.7)**		
	Contract Expenditure – NATO Consortium	**(53.1)**		
	Other Contract Payments / Internal Expenses	**(102.3)**		**2**
			(3,038.0)	
FY to Jun 12	Contract Expenditure – AWD Alliance	**(672.2)**		
	Contract Expenditure – Navantia	**(27.3)**		
	Contract Expenditure – US Government	**(61.5)**		
	Contract Expenditure – NATO Consortium	**(21.2)**		
	Other Contract Payments / Internal Expenses	**(19.7)**		**2**
			(801.9)	
Jun 12	**Total Expenditure**		**(3,839.9)**	
Jun 12	**Remaining Budget**		**4,013.2**	

Notes	
1	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $854.8m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $318.4m having been applied to the remaining life of the project.
2	Other expenditure comprises: Operating expenditure, minor contract expenditure and other capital expenditure not attributable to the listed contracts. **A reclassification of $0.8m is due to the figure in the prior year including other EO expenditure not related to the NATO Consortium.**

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		6.5	FMS	**The over expenditure of the budget was predominantly due to recognising the expenditure of the Industry Participants occurring in FY 11/12 consistent with accrual accounting standards. Another contributing factor was bringing forward payment for the FMS cases. These increases were marginally offset by cost savings in the PMO and not meeting the expenditure of the Facilities budget.**
		1.3	Overseas Industry	
		113.3	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(14.6)	Commonwealth Delay	
695.4	**801.9**	**106.5**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
AWD Alliance	Oct 07	4,323.1	**4,421.1**	Variable with Pain/Gain Share	Alliance	
Navantia	Oct 07	373.6	**383.3**	Fixed with indices escalation	Alliance based	
NATO Consortium	Dec 09	78.5	**85.6**	FMS (NATO)	FMS (NATO)	**1**
US Government	Oct 05	842.7	**1,032.6**	FMS	FMS	2

Notes

1	**The NATO Consortium Contract was increased by $7.2m during FY11/12 to cover price increases expected during Contract negotiations between the Consortium and the Original Equipment Manufacturer.**
2	The FMS Case established pre-Second Pass involved three contractual steps (initial version and two amendments); October 2005 for initial engineering services, April 2006 for long lead items and July 2006 for three ship sets of core Aegis Combat System Equipment. The resulting scope was in accordance with Government approval of Sea 4000 Phase 3.1. Post-Second Pass, there have been two further amendments to the FMS Case for additional equipment and services for both the AWD Program and the AWD Alliance. These amendments are in accordance with Government approval at Second Pass for the full scope of Sea 4000 Phase 3. There will be further amendments to the FMS Case to cover additional equipment and services for the project. FMS prices are out turned US dollar amounts which have been converted to AUD using exchange rate at original base date. The Price at Signature excludes $171m spent in previous phases of the project. The Price at 30 June **2012** excludes a current Alliance **cost** of **$201.9m.**

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
AWD Alliance	3	3	Air Warfare Destroyer	
Navantia	N/A	N/A	Platform System Design and Services	
NATO Consortium	Classified	Classified	ESSM Missiles	1
US Government	3	3	Aegis Combat System	

Major equipment received and quantities to 30 Jun 12

All major design reviews completed. Block production is underway at all three shipyards.

Notes

1	Quantity being acquired is classified.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System /Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	AWD Program	Mar 08		Apr 08	1	
Preliminary Design	AWD Program	Dec 08		Feb 09	0	1
Critical Design	AWD Program	Dec 09		Feb 10	0	2
Support System Detailed Design Review	AWD Program	Jun 10		Aug 10	0	3

Notes	
1	The PDR was conducted as scheduled in December 2008 and resulting actions completed as scheduled by February 2009.
2	The CDR was conducted as scheduled in December 2009 and resulting actions completed as scheduled by February 2010.
3	The SSDDR was conducted as scheduled in June 2010 and resulting actions completed August 2010.

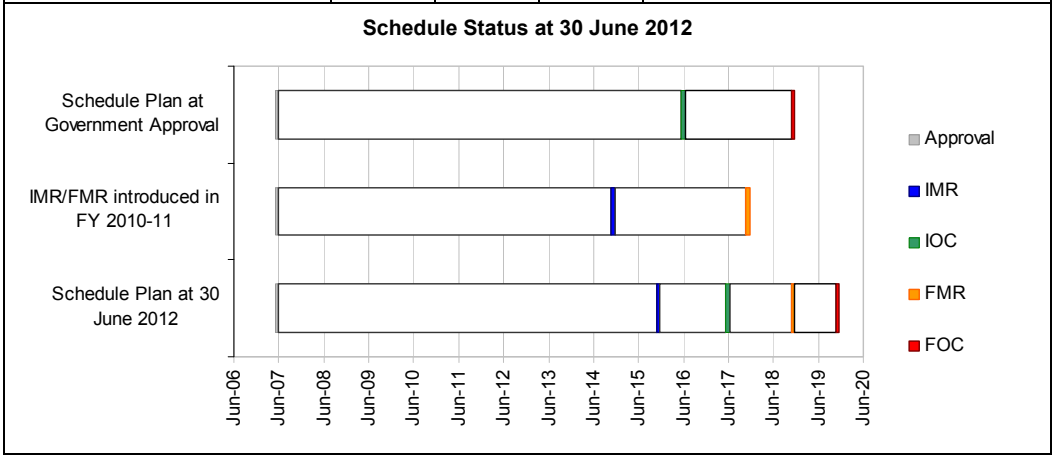
3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Ship 1 Complete Hull Integration	Dec 12	Dec 12	Dec 13	12	1, 3
	Ship 1 Start Combat System Light Off	Dec 13	Dec 13	Dec 14	12	2, 3
	Ship 2 Complete Hull Integration	Mar 14	Mar 14	Mar 15	12	3
	Ship 2 Start Combat System Light Off	Mar 15	Mar 15	Mar 16	12	3
	Ship 3 Complete Hull Integration	Jun 15	Jun 15	Jun 16	12	3
	Ship 3 Start Combat System Light Off	Jun 16	Jun 16	Jun 17	12	3
Acceptance	Ship 1 – Commencement of Category 5 Trials	Aug 14	Aug 14	Aug 15	12	3
	Ship 1 – Provisional Acceptance (Initial Materiel Release)	Dec 14	Dec 14	Dec 15	12	3
	Ship 2 – Commencement of Category 5 Trials	Nov 15	Nov 15	Nov 16	12	3
	Ship 2 – Provisional Acceptance (Materiel Release 2)	Mar 16	Mar 16	Mar 17	12	3
	Ship 3 – Commencement of Category 5 Trials	Feb 17	Feb 17	Feb 18	12	3
	Ship 3 – Provisional Acceptance (Materiel Release 3)	Jun 17	Jun 17	Jun 18	12	3

Notes	
1	Complete Hull Integration is achieved when the last erection joint is structurally inspected and accepted.
2	Start Combat System Light Off verifies the readiness of the first set of installed combat system equipment for CAT 4 testing.
3	Difficulties with initial block production and shipyard capacity issues have affected the schedule for the first ship which will be delayed by 12 months. This has a flow on effect for Ships 2 and 3.

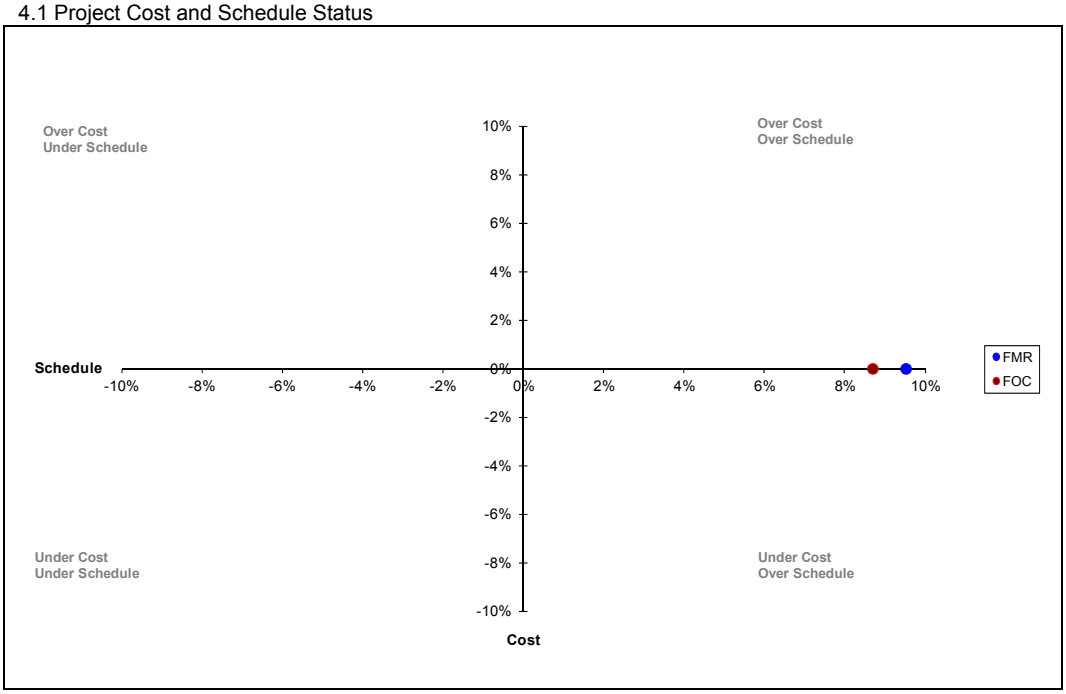
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Dec 14	Dec 15	12	Delays with initial block production. This has a flow on effect to later milestones.
Initial Operational Capability (IOC)	Jun 16	Jun 17	12	
Final Materiel Release (FMR)	Dec 17	Dec 18	12	
Final Operational Capability (FOC)	Dec 18	Dec 19	12	



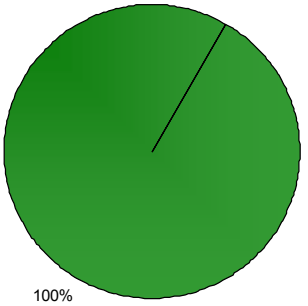
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	**Green:** The Project is currently meeting materiel capability requirements as expressed in the suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities.
	Amber: N/A
	Red: N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Change Management: Any change introduced to the existing platform design will have cost and schedule impact. The extent of which is dependent upon the timing of the change. Pressure for change could occur for a variety of reasons including: • Requirements change. • Legislative and compliance requirements. • Equipment obsolescence.	Recognise that the program will have to manage change to cope with obsolescence. Effectively engage with all stakeholders to ensure that they understand the potential implications of change to cost and schedule. Provide robust mechanisms to control the authorisation of change. Ensure that where change is required that it is approved and implemented in an appropriate phase of the program. Delays in approval will usually result in significant cost and schedule impact. **Design Chill implemented in mid-year 2011 to reduce change rolling into the production baseline.**
Integration of the Australianised Aegis Combat System. Key Risks: • The current version of the Aegis Weapons System has not been previously integrated in the platform. • Integration of Electronic Warfare and Communications Systems. • Equipment selections may impact on the topside design. • Sonar – The software development and integration.	The risks associated with the integration of the Aegis Weapons System are being actively managed through regular reviews between the Alliance, Platform System Designer, US Navy and Lockheed Martin (the Aegis equipment supplier to the US Navy). Action is taken to ensure emerging issues are identified and addressed in a timely manner. Electronic Warfare and Communications and Information Systems procurement strategies have been developed with a wide range of stakeholder engagement. These strategies are aimed at ensuring that the customer will be satisfied with the contracted solution and that the solution will have minimal impact on the platform design. Sonar – Is being actively managed by the Alliance including formal reviews with close out actions and embedded staff.

Capability Acceptance: Certification requirements are unclear for some equipment and US Navy and some Original Equipment Manufacturers are not disclosing requested objective quality evidence.	The Project Certification Plan has been agreed with the RAN. The Program is working closely with the US Navy and Original Equipment Manufacturers to obtain the required objective quality evidence. **Working with RAN to establish processes, procedures and principles to achieve certification**.
Subcontractor Performance: Subcontractor performance may result in poor quality product, delays or changed requirements.	The performance of some subcontractors has required active management and intervention. Embedding Alliance staff in block subcontractors premises provides management oversight and the ability to address and resolve issues quickly. Sonar – The Alliance is actively working with the Sonar OEM to manage risk associated with software development and integration.
Support System: current data available to the Alliance and/or the Commonwealth may not be mature enough to achieve an optimised support system **(maturity of LCC data, loss of project data that supports Through Life Support)**. Facilities may not be ready when required for transition into in-service support. **Intellectual Property requirements might not be delivered leading to negative through life support impacts**.	Mitigation strategies are in place to minimise the risk and work is in hand with the Alliance to develop strategies to progressively seek the data required to support the development of an optimised support system. **Facilities Submission to the Public Works Committee to occur in 2012.** **Working with the Alliance to improve the Intellectual Property data that needs to be captured.**
Shipbuilding Productivity: achieving the required level of shipbuilding productivity may be compromised by skilled labour shortages, delays in deliveries of data and materials to the shipyards, and limitations on the production engineering capacity of the shipyards.	Actions to mitigate include increased shipbuilder recruitment activities, deployment of Navantia skilled labour to all 3 build locations, roll out of Lean process improvement across the ASC facility, process improvements to minimise delays caused by problems at the work front, increased focus on improving construction design products, and prioritisation of the delivery of urgent construction products from Navantia. Benchmarking of the shipbuilder's production effort **was undertaken in September 2011 and highlighted initiatives for implementation that could improve shipbuilder's productivity**.
Schedule: the quality and rework issues in block construction are higher than originally envisaged. As a result of the increasing workloads the schedule is being reviewed and managed by the Alliance. On 26 May 2011 the Minister for Defence announced the reallocation of construction work for the AWD Project.	**The AWD Alliance took two key actions to address schedule slippage. There was an initial reallocation of hull blocks among Australian shipyards in December 2010, followed by a further reallocation of blocks between the Australian shipyards and Navantia in May 2011. The AWD Alliance also took action in 2010 to place more shipbuilding experts from Navantia, Bath Iron Works and Lloyds Register into the three shipyards.**

Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
PMO Budget: The out-turned budget (FY10/11) might be insufficient to cover AWD Program costs due to change in financial management policy to allocate budgets in Out-turn Budget rather than Constant Dollar Budgets. Risk exposure will occur from a reduction in buying power as and when funds are reprogrammed (from year to year) due to schedule/payment slippages and movements resulting from estimate spend spread variations.	**This risk has been closed/retired, and the impact included in the indexation issue below.**

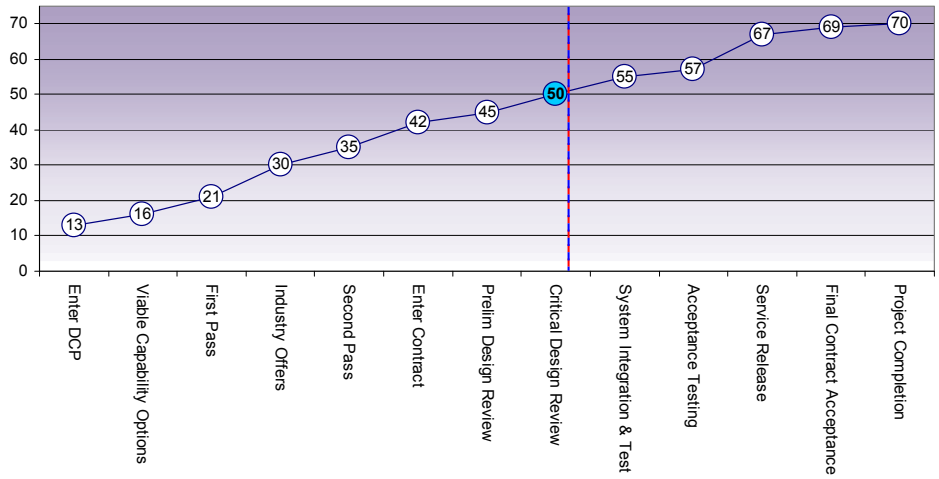
6.2 Major Project Issues

Description	Remedial Action
The delivery of FMS elements of the AWD supplies may not be possible, or may be delayed or compromised in integrity, due to the budget for FMS Engineering and Technical Assistance (ETA) not being sufficient.	**Working with the US to identify options to reduce cost and provide waterfront support for Ships 2 and 3.**
Indexation: Applying an average, fixed Specialised Military Equipment index to the Program budget may not be sufficient to fund the actual cost increases and liabilities defined in the ABTIA and PSD contracts.	**Close monitoring through annual estimates to ensure that the balance of the total project budget remains sufficient to cover any shortfalls. The program will need to manage this through the DMO financial process.**
Shipbuilding Delay: The AWD Alliance will not meet contracted delivery dates for the three ships.	In response to delays in hull block fabrication, the AWD Alliance acted to limit a potential two year slippage in the delivery of HMAS Hobart by up to 12 months. Two key actions were an initial reallocation of hull blocks among Australian shipyards in December 2010, followed by a further reallocation of blocks between the Australian shipyards and Navantia in May 2011. The AWD Alliance also took action in 2010 to place more shipbuilding experts from Navantia, Bath Iron Works and Lloyds Register into the three shipyards.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	7	7	7	8	7	7	7	50
Critical Design Review	Project Status	7	7	8	8	7	7	7	51
	Explanation	• **Requirement:** reflects the successful completion of the Support System Detailed Design Review in August 2010.							



2010-11 DMO MPR Status - - - -	2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Formation of the Alliance, a new organisational structure takes time and effort to develop the culture necessary to achieve improved outcomes. An external facilitator was engaged to assist in the initial and ongoing development of the Alliance and this has proved invaluable.	Governance
The Program Office, originally located in both Canberra and Adelaide was relocated to Adelaide to improve operations and interactions with the Alliance. The relocation involved considerable effort and a resultant loss in knowledge of staff who did not relocate. Earlier consolidation of the Program Office would have been beneficial.	Resourcing
The interpretation of the requirements for fitness of purpose of drawings is different between contracting parties. A review of all product types prior to contract and interrogation of the delivery schedule to confirm sufficient time for reviews and incorporation of comments is necessary.	Contract Management

The shipbuilding capacity of shipyards involved in a project like AWD needs to be assessed in detail in terms of precise capacity to undertake production engineering as well as the workload constraints of facilities, production supervision and overall workforce numbers taking into consideration the total contracts conducted at the shipyard in parallel.	Resourcing First of Type Equipment
The schedule that plans the transition from design to production needs detailed evaluation by the designer(s) and the production shipyard(s) to ensure the balance between commencing production and completing very detailed design is appropriately balanced and agreed.	Scheduling

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
Acting General Manager, Programs	**Mr Andrew Cawley**
Acting Program Manager	**Mr Peter Croser**
Acting Deputy Program Manager	**Mr Greg McPherson**
Deputy Program Manager	Commodore Steve Tiffen, RAN

Project Data Summary Sheet[233]

Project Name	**AIRBORNE EARLY WARNING AND CONTROL AIRCRAFT**
Project Number	**AIR 5077 Phase 3**
Capability Type	New
Service	Royal Australian Air Force
Government 1st Pass Approval	Dec 97
Government 2nd Pass Approval	Dec 00
Total Approved Budget (Current)	**$3,829.5m**
2011-12 Budget	**$313.7m**
Project Stage	**Acceptance Testing**
Complexity	ACAT I

Section 1 – Project Summary

1.1 Project Description

This project will provide the Australian Defence Force (ADF) with an airborne early warning and control (AEW&C) capability, with the provision of six aircraft and associated supplies and support. As an integral part of a layered ADF Air Defence System, the airborne early warning and control capability will enhance surveillance, air defence, fleet support and force coordination operations in defence of Australian sovereignty and national interests.

1.2 Current Status

This has been a Project of Concern since 2009-10.

Cost Performance

As at 30 June 2012, project AIR 5077 Phase 3 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

As a result of the commercial settlements reached in November 2009 and April 2011, the Commonwealth received compensation from Boeing for costs incurred as a result of project delays and radar performance shortfalls. Payments are being made in accordance with the revised payment schedule.

Schedule Performance

As at 30 June **2011**, the Commonwealth had accepted **four** aircraft in an initial configuration, available to the Air Force for training and initial operations. **Upgrading of these four aircraft to the second increment of their initial configuration was completed in December 2011 and a fifth aircraft was accepted in the second increment initial configuration, as agreed in the settlement reached in April 2011. The Commonwealth accepted the Mission Support Segment, Operational Mission Simulator and AEW&C Support Facility in their respective initial configurations over the period October 2011 to April 2012.**

Boeing failed to deliver the first aircraft in a final operational configuration in **March 2012**, as agreed in the

[233] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

settlement reached in **April 2011**. **Under a Remediation Plan agreed with the Commonwealth in December 2011,** Boeing delivered **a sixth** aircraft in a 'final' configuration, capable of supporting all operational tasking short of high-end war fighting in **May** 2012. **However, delays in completing the large volume of formal documentation required for contractual acceptance of the system will result in aircraft final acceptance not occurring until November 2012**, in which case the total delay to this milestone against the original contract baseline would be **72** months.

Materiel Capability Performance

In service Wedgetail aircraft have participated in a number of local and overseas exercises over the past twelve months, with each successive System (software) Build delivered to the fleet demonstrating improved integrated system performance. Radar performance in the clear has been substantially remediated and a number of shortfalls in Electronic Support Measures (ESM), Communications Datalink and residual integrated system performance are being progressively remediated. The Commonwealth and Boeing are working together to resolve the remaining capability risks that need to be retired in the mission systems, communications and integration areas

1.3 Project Context

Project	Explanation
Background	Government gave the equivalent of first pass approval for Phase 3 of this project in December 1997. Following a competitive Initial Design and tendering activity, the Government gave the equivalent of second pass approval in December 2000 and a contract was signed with The Boeing Company (Boeing) the next day for supply of four aircraft and associated supplies and support. In April 2004, Government gave approval to amending the contract for supply of an additional two aircraft. The airborne early warning and control 'Wedgetail' is based on Boeing's next generation 737 aircraft, modified to accommodate various sophisticated mission systems. The primary sensor on the aircraft is a phased-array radar – with no moving parts - that can scan through 360 degrees. In March 2007, Boeing presented the results of the schedule replan to the Commonwealth following the company's announcement, in February 2007, of a two-year slip in the program. This slippage results from problems associated with sub-system integration; supplier hardware availability; mission computing, radar and electronic support measures maturity and stability; and aircraft modification. In May 2008, Boeing advised a further delay to the program resulting from ongoing problems with radar and electronic support measures development and system integration. In December 2008, Boeing and the Commonwealth agreed, under a Deed, to enter into a modified test and operational evaluation program aimed at determining the extent to which the aircraft system meets the specification and how well it will perform operationally. The DMO Program Office, Boeing and Northrop Grumman, supported by DSTO and US Government agencies, also cooperated in the conduct of an independent assessment of radar performance by Massachusetts Institute of Technology (MIT) Lincoln Laboratories to determine the extent of the performance shortfall based on flight test data. An operational utility demonstration was successfully conducted in Australia in April 2009 and provided insight into the operational potential of the AEW&C capability. Based on the outcomes of these activities, the Commonwealth entered into formal negotiations with Boeing in August 2009 seeking a commercial settlement addressing, among other things, the key issues of: project delays; incremental delivery; and compensation for projected performance shortfalls. The parties reached agreement on the way ahead for the program in November 2009. In April 2010, the Commonwealth accepted two aircraft in an initial operating capacity in order to commence training and initial operations. A third aircraft was accepted in this initial operating capacity in June 2010 and a fourth in December 2010. Boeing failed to deliver the first aircraft in a final operational configuration in December 2010, as agreed in the settlement reached in November 2009, due to ongoing issues with Communications and ESM subsystems technical maturity and integrated system stability. The Commonwealth entered into contract

	negotiations with Boeing in November 2010 to refine the path to final acceptance and reached agreement in April 2011. **Boeing failed to deliver the first aircraft in a final operating configuration in March 2012, as agreed in the settlement reached in April 2011, again due to ongoing issues with Communications and ESM subsystems technical maturity and integrated system performance. In December 2011, the Commonwealth and Boeing agreed to a Remediation Plan that required Boeing to deliver the first aircraft in a final operating configuration, capable of supporting all operational tasking short of high-end war fighting, in July 2012.**
Uniqueness	Project Wedgetail is a highly developmental project. The phased array radar, the heart of the surveillance capability, has never previously been integrated into an operational system. Northrop Grumman Corporation, the suppliers to Boeing of the phased array radar, has worked to an extremely tight schedule of putting into production and integrating this unique radar, which was still undergoing initial design at the time of contract signature. Similar schedule acceleration issues have also been encountered on other mission critical systems. The ADF will be the first to operate an aircraft of this configuration and capability and significant effort has been devoted by the RAAF in developing operational doctrine and tactics for its deployment.
Major Challenges	Integration of the radar and other mission critical systems such as electronic support measures, communication systems and data links has proved to be more complex than originally anticipated. Initial planning for the project was optimistic, resulting in an aggressive schedule that had been compressed to such a high level that there was no margin for re-work or risks being realised. Radar performance was subject to detailed independent analysis and operational assessment in preparation for the contract settlement negotiations held in late 2009, resulting in a determination that performance will not achieve specification at final delivery and further development will be required. Subsequently, a radar remediation program was established. This program includes a radar collaborative research and development program. A contract for the collaborative program was signed on 21 June 2010. The program **has been very successful and consequently the period of performance has been extended to the end of 2012**. Radar performance **in the clear has been recovered to very close to specification and substantial improvement in performance in clutter is anticipated by mid 2013**. Further technical challenges in the development of the **Communications,** ESM, Electronic Warfare Self Protection (EWSP) and ground support systems are still being encountered and resolution of these will drive the schedule to final acceptance. Overall technical and schedule risk **is progressively reducing but** remains **medium**-high.
Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
AIR 5376 F/A-18 Hornet Upgrade	Upgrade of the F/A-18 Hornet communications, navigation and mission computing systems.	Air to air data communications in support of the air defence mission.
AIR 5402 Air to Air Refuelling Capability	Provision of five Multi-Role Tanker Transport aircraft and associated supplies and support.	Air-to-air refuelling support for extended range/duration airborne early warning and control missions.

AIR 5333 2CRU and 3CRU Replacement (Vigilare)	Replace the fixed, ground-based Aerospace Surveillance and Battlespace Management command and control capability.	Coordination between airborne early warning and control and ground-based control units.
AIR 5405 Mobile Regional Operations Centre	Replace the deployable, ground-based Aerospace Surveillance and Battlespace Management command and control capability. Not yet approved.	Coordination between airborne early warning and control and deployed ground-based control unit.
JP 2008 MILSATCOM	Provision of a military satellite communications system.	Air-to-surface and air-to-air communications support.
JP 2030 Phases 5B and 7B Air Command Support System	Provision of enhancements to the Air Command Support System.	Command and control interface for the airborne early warning and control Mission Support System.
JP 2072 Battlespace Communications	Provision of an enhanced battlespace communications system for the land environment.	Terrestrial communications support to the deployable airborne early warning and control Mission Support System.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Dec 97	Original Approved		2,170.4	1
Jul 98	Real Variation – Transfer	(170.4)		2
Nov 99	Real Variation – Transfer	807.9		3
Apr 01	Real Variation – Budgetary Adjustments	(166.0)		4
Mar 02	Real Variation – Transfer	(3.9)		5
Jun 04	Real Variation – Scope	225.6		6
Aug 04	Real Variation – Budgetary Adjustments	(2.4)		7
Aug 04	Real Variation – Transfer	(14.0)		8
Jun 05	Real Variation – Transfer	(1.0)		8
Aug 05	Real Variation – Budgetary Adjustments	(4.8)		9
			671.0	
Jul 10	Price Indexation		1,111.1	10
Jun 12	Exchange Variation		**(123.0)**	
Jun 12	**Total Budget**		**3,829.5**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – The Boeing Company	**(2,654.3)**		
	Contract Expenditure – US Govt	**(97.3)**		
	Contract Expenditure – The Boeing Company	**(3.6)**		**11**
	Other Contract Payments / Internal Expenses	**(217.1)**		**12**
			(2,972.3)	
FY to Jun 12	Contract Expenditure – The Boeing Company	**(250.2)**		
	Contract Expenditure – US Govt	**(1.5)**		
	Contract Expenditure – The Boeing Company	**(1.0)**		**11**
	Other Contract Payments / Internal Expenses	**(29.9)**		**13**
			(282.6)	
FY to Jun 12	**Total Expenditure**		**(3,254.9)**	
Jun 12	**Remaining Budget**		**574.6**	

Notes	
1	This project's original DMO budget amount is that prior to achieving Second Pass Government approval.
2	Transfer to Project Olympus.
3	Merger of Project Olympus, which had been established separately to acquire classified elements of the AEW&C capability.
4	Variation for overfunding of indexation and foreign exchange at time of approval.
5	Transfer to supplement Overseas Allowances.
6	Increased scope, approved by Government in April 2004, for the acquisition of the 5th and 6th aircraft.
7	Administrative Savings harvest.
8	Transfer to Facilities.
9	Skilling of Defence Industry harvest.
10	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $1068.4m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $42.7m. $388.1m of this amount is relates to a real cost increase for contract price indexation variations beyond the supplementation provided by Government.

11	**An additional contract with The Boeing Company, for Radar Subsystem Performance Remediation, previously reported under "Other Contract Payments" has been separated out because the contract value increased to greater than $10m during FY11/12.**
12	Out of the **$217.1m** Life to Date expenditure up to **30 June 2011** the majority of expenditure is associated with Independent Verification and Validation Services of **$62.1m**, In Service Support Contract costs of **$37.9m**, Facilities related expenses of **$59.9m**, travel costs of **$17.4m** and other project management support costs (legal, project administration, minor asset **and ancillary support equipment costs** etc) of **$39.8m)**.
13	**Out of the $29.9m expenditure up to 30 June 2012, the majority is associated with the procurement of ancillary Prime and Support equipment of $17.4m, In Service Support Contract costs of $2.2m, External Service Provider support costs of $3.7m, Operational Test and Evaluation costs of $0.9m and other project administration costs (travel, legal, DSTO support, administration etc) of approx $5.8m.**

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		(3.0)	FMS	**The year end variance is driven by underachievement's in Project Admin expense requirements, Prime Equipment ancillary procurements, including additional spares due to long lead times on equipment deliveries, reduction in initial maintenance forecasts for ESM and EWSP support requirements and lower than forecast FMS recommendations. These underachievements are partially offset by higher than forecasts System Acquisition Contract expenditure and Foreign Exchange losses resulting in higher AUD spend.**
		(24.9)	Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
		7.5	FOREX Variation	
		(10.6)	Commonwealth Delays	
313.7	**282.7**	**(31.0)**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
Boeing	Dec 00	2,257.7	2,606.8	Variable	DEFPUR 101	
US Government	Jul 01	97.9	137.9	FMS	FMS	
Boeing	**Jun 10**	**5.6**	**24.8**	**Fixed**	**ASDEFCON (Services)**	**1**

Notes	
1	**Increased in value to greater than $10m during FY11/12.**

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
Boeing	4	6	Boeing 737-700 IGW AEW&C Aircraft	
US Government	N/A	N/A	AEW&C Hardware and USAF Support	
Boeing	**N/A**	**N/A**	**Radar Subsystem Performance Remediation**	**1**

Major equipment received and quantities to 30 Jun 12
Initial Acceptance of **six** aircraft, capable of supporting training and peacetime national tasking. Engineering and maintenance arrangements established.

Notes	
1	**Increased in value to greater than $10m during FY11/12.**

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Preliminary Design	Airborne Mission System	Jul 02		Jun 02	(1)	1
	Operational Mission Simulator	Jan 03		Apr 03	3	
	Mission Support System	Mar 03		Apr 03	1	
	Operational Flight Trainer	Aug 03		Jul 03	(1)	
	Airborne Early Warning and Control Support Facility	Nov 03		Oct 03	(1)	
Critical Design	Airborne Mission System	Feb 03		Dec 02	(2)	
	Operational Mission Simulator	Nov 03		Nov 03	0	
	Mission Support System	Dec 03		Nov 03	(1)	
	Operational Flight Trainer	May 04		Apr 04	(1)	
	Airborne Early Warning and Control Support Facility	Oct 04		Sep 04	(1)	

Notes	
1	Variances to Design Reviews were due to various minor causes.

3.2 Contractor Test and Evaluation Progress

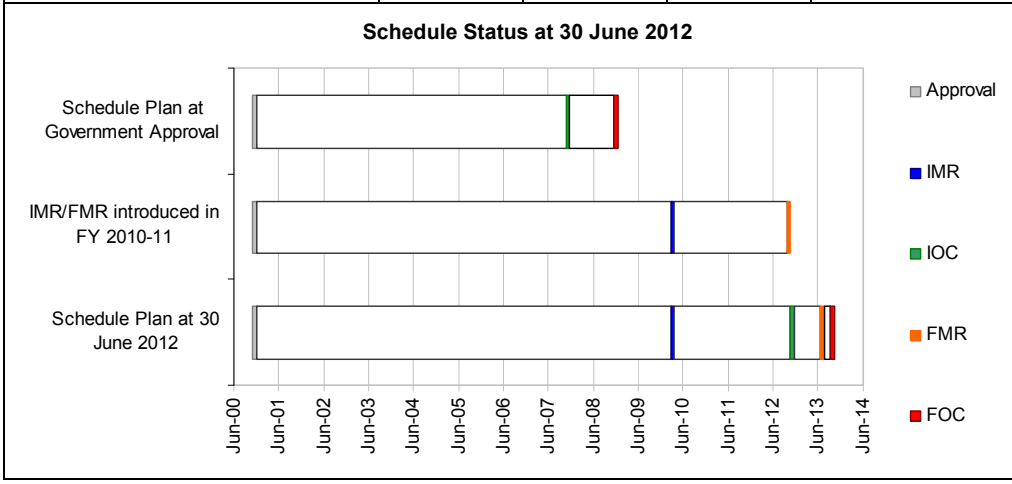
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned (Note 1)	Achieved /Forecast (Note 1)	Variance (Months)	Notes
System Integration	Airborne Mission System	Mar 06	**May 12**	**Oct 12**	**79**	2
	Operational Mission Simulator	Mar 06	Dec 10	Nov 10	57	
	Operational Flight Trainer	Dec 05	Dec 05	Dec 05	0	
	Mission Support System	Jul 06	Oct 08	**Oct 11**	**63**	3
	AEW&C Support Facility	Dec 06	Dec 10	**Jul 11**	**57**	4
Acceptance	Airborne Mission System	Nov 06	**May 12**	**Oct 12**	**71**	5
	Operational Mission Simulator	May 06	Sep 11	**Oct 11**	**62**	5, 6
	Operational Flight Trainer	Mar 06	Nov 08	Feb 09	35	7
	Mission Support System	Aug 06	Jul 11	**Oct 11**	**62**	5, 6
	AEW&C Support Facility	Mar 07	Mar 11	**Feb 12**	**59**	5, 6

Notes	
1	The Current Planned dates reflect the revised **contract** schedule, whereas the Forecast dates and associated Variances reflect Defence's assessment of when completion is likely to be achieved. The above dates reflect the completion of testing relating to the Contract Specification and do not include testing associated with the additional compensatory work agreed under the commercial settlement.
2	Airborne Mission System (AMS) integration continues to challenge progress of the AMS development and test program. Most significant challenges relate to finalisation and integration of the mission computing, datalinks, and electronic support measures subsystems, including integrated maturity, loading and latency, and stability. Supplier hardware availability continues to present challenges to the type and production program.
3	System Integration Test and Evaluation, previously reported as completed in May 2009, **was** resumed as a result of deficiencies subsequently revealed during integrated mission testing.

4	**The requirement for formal Acceptance Test and Evaluation (AT&E) for AEW&C Support Facility (ASF) Home Maintenance Base was removed via CCP action in September 2011 with achievement of compliance being conducted via 'Analysis'. As a result, the date for completion of ASF System Integration Test and Evaluation reverted to that for the already-completed System Integration test and Evaluation for ASF Electronic Warfare Squadron.**
5	Problems associated with sub-system integration; mission computing, loading and latency, radar and electronic support measures maturity and stability; and supplier hardware availability.
6	Ground Support Segments (GSS) continued to be impacted by AMS schedule delays.
7	Disagreement between Boeing and Commonwealth over specification requirements.

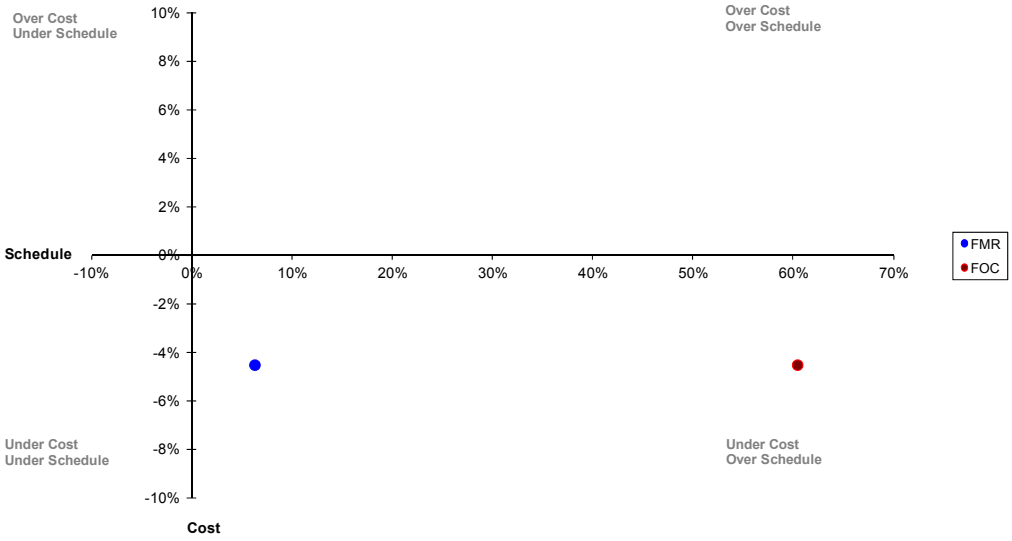
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Apr 10	N/A	Delays to system delivery due to problems associated with sub-system integration, supplier hardware availability, radar and electronic support measures maturity, and aircraft modification.
Materiel Release 2	N/A	Sep 10	N/A	
Materiel Release 3	Jul 11	**Nov 12**	**16**	
Initial Operational Capability (IOC)	Dec 07	**Dec 12**	**60**	
Final Materiel Release (FMR)	Nov 12	**Aug 13**	**9**	
Final Operational Capability (FOC)	Dec 08	**Oct 13**	**58**	



Section 4 – Project Cost and Schedule Status

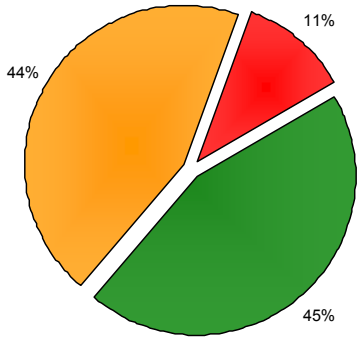
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Green:

Performance requirements for IMR have been met.

Amber:

Performance shortfalls and technical difficulties are impacting on the transition to operational service and sustainment. There is also a present risk in the availability of supplies. **Most deficiencies are expected to be remediated by Boeing before final delivery. The risk posed by diminishing manufacturing sources is being addressed through the procurement of additional spares.**

Red:

Performance deficiencies in critical elements of the mission system currently pose risk to achievement of MR3 and FMR. Most deficiencies are expected to be remediated by Boeing before final delivery, but some radar deficiencies will remain at final delivery. **Negotiations are being held with Boeing on implementation of additional radar remediation solutions in time for Final Materiel Release.**

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
The major **residual** risks to the project fall within the following categories: • Schedule; and • Attainment of contracted technical performance. Schedule and technical performance risks arise from incomplete software development, system integration and acceptance testing.	Engage and influence the prime contractor and major sub-contractors to maintain appropriate focus and commitment to deliver against the revised schedule baseline.
Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
N/A	N/A

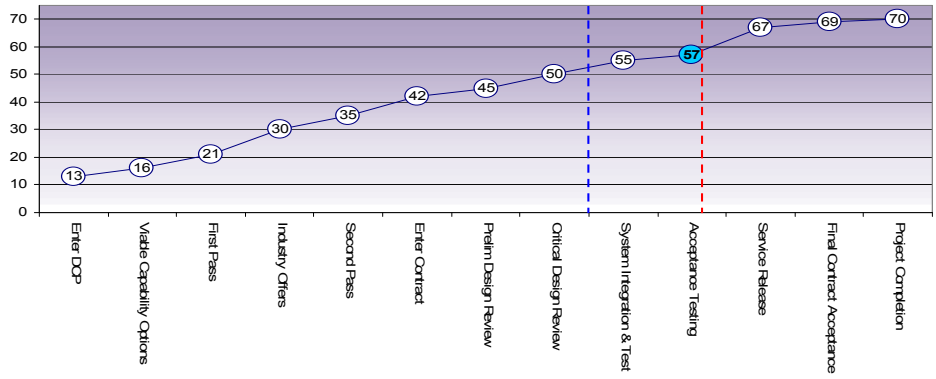
6.2 Major Project Issues

Description	Remedial Action
Current major project issues fall within the following categories: • Technical performance short falls; • Schedule delays; and • Contract management. Technical performance shortfalls arise due to some sub-systems not meeting contracted performance requirements. Notwithstanding striking a revised schedule baseline in the commercial settlement agreed in **April 2011**, schedule delays continue to be encountered. Contract management issues relate to: • Schedule delays arising out of problems associated with subsystem maturity and stability and integrated system performance. • Ramping up of In Service Support Contract.	Engage and influence the prime contractor and major sub-contractors under an incremental delivery approach to maintain appropriate focus and commitment to deliver contracted performance in accordance with the revised schedule. Maintain engagement with the prime contractor to achieve alignment of in service support with the incremental delivery of aircraft and associated support equipment. **Issues related to ramping up of the In Service Support Contract have been retired.**

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	8	**8**	8	8	**9**	8	8	**57**
Acceptance Testing	Project Status	**8**	**8**	8	**9**	8	**8**	9	**58**
	Explanation	• **Technical Understanding: Knowledge necessary to operate and support the solution has been transferred to Air Force and the In Service support organisation.** • **Technical Difficulty: While testing is substantially complete, there is still work to go before the system can be certified as performing to design.** • **Operations and Support:** Operations and support systems have begun transitioning to the operational environment with Initial Acceptance of the **six** aircraft **and each of the Ground Support Segments**.							



2010-11 DMO MPR Status - - - -	2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
In the context of pre-project planning, the need to better appreciate the effort involved in being a customer of a first-of type program.	First of Type Equipment
Underestimating the length of time required and effort involved in undertaking these phases when applied to a complex, highly developmental system.	Schedule Management
Better appreciating the challenges involved in contractor management in a complex developmental project.	Contract Management
Recognising the need for pro-active risk management and the use of high-end risk management tools.	First of Type Equipment
The need for industry to pay greater attention to adequately resourcing complex and highly developmental projects.	Resourcing
Early recognition of the need for proactive stakeholder engagement throughout the project.	Contract Management
The need to provide adequate resources with sufficient lead-time to develop and execute the evaluation and negotiating phases for the in service support component of a first-of type capability.	Resourcing Contract Management

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	**Mr Andrew Cawley**
Division Head	AVM Chris Deeble
Branch Head	Mr Bill Spencer
Project Director	AVM Chris Deeble
Project Manager	AVM Chris Deeble

Project Data Summary Sheet[234]

Project Name	**MULTI ROLE HELICOPTER**
Project Number	**AIR 9000 Phase 2, 4 and 6**
Capability Type	Replacement
Service	Royal Australian Navy and Australian Army
Government 1st Pass Approval	Apr 06 (Phases 4 and 6)
Government 2nd Pass Approval	Aug 04 (Phase 2), Apr 06 (Phases 4 and 6)
Total Approved Budget (Current)	**$3,628.4m**
2011-12 Budget	**$259.5m**
Project Stage	Acceptance Testing
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

The Multi-Role Helicopter (MRH) Program is a key component of the Australian Defence Force (ADF) Helicopter Strategic Master Plan that seeks to rationalise the number of helicopter types in ADF service. The MRH Program consists of three phases of AIR 9000. Phase 2 is the acquisition of an additional Squadron of troop lift aircraft for the Australian Army, Phase 4 will replace Army's Black Hawk helicopters in the Air Mobile and Special Operations roles, and Phase 6 will replace Royal Australian Navy (RAN) Sea King helicopters in the Maritime Support Helicopter role. All three phases are grouped under the AIR 9000 MRH Program.

1.2 Current Status

On 28 November 2011, the Minister for Defence Materiel announced this project is a Project of Concern.

Cost Performance

As at 30 June 2012, project AIR 9000 Phase 2 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

DMO is conducting negotiations with the prime contractor to settle a number of commercial, technical and scheduling issues, including compensation for late deliveries. Following the finalisation of these negotiations DMO will undertake a review of the project budget, including levels of contingency.

[234] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

Schedule Performance

Sixteen aircraft have been accepted with **five** aircraft based with the Army's 5th Aviation Regiment in Townsville, **four** aircraft based with Navy's 808 Squadron in Nowra and **four** aircraft with the Army Aviation Training Centre in Oakey. **Three aircraft are in retrofit at the Australian Aerospace (AA) Brisbane facility**. **The** first thirteen aircraft require an in-service retrofit (at Contractor expense) to bring them up to the full Phase 2/4/6 capability baseline.

The project stopped accepting aircraft in November 2010 as the aircraft did not meet all the contractual requirements **which has impacted** the achievement of capability milestones. **The Commonwealth recommenced accepting aircraft in November 2011 after negotiating a remediation plan to address a number of engineering and reliability issues; however acceptance of aircraft was again suspended in February 2012 pending resolution of another technical concern related to the aircraft's cargo hook. In May 2012 the Commonwealth agreed to accept a further four aircraft based on AA's agreement to the commercial terms associated with the rectification of the cargo hook latent defect. Scheduled aircraft acceptance recommenced in June 2012 with the acceptance of MRH#16.**

The final aircraft is scheduled to be delivered in mid 2014, however this timeframe **is expected** to be affected by the current non conformance delays. Initial Operational Capability (IOC) for Navy and Army **have been delayed**.

Materiel Capability Performance

Following achievement of In-Service Date (ISD) with agreed partial achievement of the contracted MRH capabilities, there has been significant work by both Industry and the Commonwealth to define and implement a series of capability block enhancements to bring the MRH90 to contracted standards. This includes a retrofit program, at no additional cost to the Commonwealth, to progressively bring all aircraft up to the contracted standard.

1.3 Project Context

Project	Explanation
Background	The Additional Troop Lift project was first foreshadowed in the Defence White Paper 2000. The MRH Program consists of Phases 2, 4 & 6. Phase 2 was approved initially, providing 12 additional Troop Lift helicopters for Army. Phases 4 & 6 were approved subsequently with Phase 4 as the replacement of the Australian Army's fleet of 34 S-70A-9 Black Hawk helicopters, again for troop lift capability, and Phase 6 as the replacement of the RAN's fleet of six Sea King helicopters, providing maritime support capability for Navy. In total, the AIR 9000 MRH Program will acquire 46 MRH90 aircraft and support systems. Support capabilities, such as Electronic Warfare Self Protection Support System, MRH Software Support Centre, MRH Instrumentation System and a Ground Mission Management System, will be acquired along with training systems and in-service support. The Phase 2 Acquisition Contract was signed with AA in June 2005 with the subsequent Sustainment and Program Agreement contracts signed in July 2005. In November 2005 the Defence Capability and Investment Committee agreed that the way forward was to seek a combined first and second pass approval for both Phases 4 and 6 as part of a single approval process. Cabinet endorsement was gained in April 2006 in a combined first and second pass process for Phase 4 and Phase 6. The agreed method of procurement, a two stage Contract Change Proposal (CCP), resulted in the execution of options contained in the Program Agreement for the procurement of additional aircraft approved under Phases 4 and 6. Initial CCP**s** for the Acquisition, Sustainment and Program Agreement Contracts **were signed** in June 2006. A further CCP for development of associated systems including: Electronic Warfare Self Protection Support System, MRH Software Support Centre, MRH Instrumentation System and a Ground Mission Management System, as well as two part task trainers and a number of aircraft options were signed in October 2006. The three AIR 9000 Phase 2/4/6 contracts viz. Program Agreement Contract, Acquisition Contract and Sustainment Contract incorporate the above CCPs. On acceptance of two MRH90, appropriate training, maintenance and supply support, an

	ISD of December 2007 was achieved with aircraft operating under a Special Flight Permit granted by the Chief of Air Force. This triggered the Sustainment Contract to come into effect and all three contracts are now currently active. **The Commonwealth suspended acceptance of aircraft from AA in November 2010 but recommenced in November 2011 after negotiating a remediation plan (Deed of Agreement and CCPs) to address a number of engineering and reliability issues. Concurrent with the recommencement of aircraft acceptance in November 2011, the Minister for Defence announced that the project would be listed as a Project Of Concern citing early warning thresholds being exceeded for schedule, aircraft technical deficiencies and AA's performance.** **The negotiations have so far put in place an improved performance regime for MRH90 sustainment for a twelve month period during which time negotiations will be continued with a view to delivering an enduring MRH90 sustainment regime in keeping with the contracted capability milestones.**
Uniqueness	The MRH90 aircraft is based upon the German Army variant of the NH90 Troop Transport Helicopter. The MRH90 design uses well established aerospace technologies, but will introduce new technologies into Army and Navy, primarily in the areas of composite structure, helmet mounted sight and display and fly-by-wire flight control systems. The MRH Program is providing an MRH90 capability to two main users - Army and RAN. The capability delivery complexity this introduces has been mitigated through an agreement between Chief of Army and Chief of Navy. This provides the project with a single interface for introduction into service issues. The MRH Program Office Design Acceptance Strategy is dependent on French Military Airworthiness Authority's, Direction Générale de l'Armament (DGA), prior acceptance of the NH90 variants and certification recommendation for the MRH90. The DGA and other National Qualification Organisations' prior acceptance of European NH90s provides confidence in the MRH90 platform for the ADF to leverage off common certification evidence.
Major Challenges	The reliability and Rate of Effort of MRH90 is well below the contracted requirement and has impacted the training of MRH90 aircrew. Key contractual and capability milestones have also been impacted by the reduced Flying Rate of Effort. Aircraft system lack of maturity has affected the certification schedule of the MRH90. Several aircraft component weaknesses, including the **inadequate engine inlet protection, windscreen cracking, cargo hook release mechanism, a number of navigation system concerns, easily damaged** cabin floor panels **and a poor flight manual have led to significant operational limitations being imposed on the aircraft.**
Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Apr 04	Original Approved		3.3	1
Aug 04	Government Second Pass Approval	953.9		
Jun 06	Real Variation – Scope	2,565.6		2
Oct 06	Real Variation – Transfer	(219.0)		3
Oct 08	Real Variation – Transfer	(20.0)		4
Oct 08	Real Variation – Scope	31.5		5
			3,312.0	
Jul 10	Price Indexation		679.8	6
Jun 12	Exchange Variation		**(366.7)**	
Jun 12	**Total Budget**		**3,628.4**	
	Project Expenditure			
Prior to Jul 11	Contract expenditure – Australian Aerospace	**(1,630.0)**		
	Contract expenditure – CAE Australia	**(101.1)**		
	Other Contract Payments / Internal Expenses	**(107.1)**		7
			(1,838.2)	
FY to Jun 12	Contract expenditure – Australian Aerospace	**(180.7)**		
	Contract expenditure – CAE Australia	**(18.6)**		
	Other Contract Payments / Internal Expenses	**(10.5)**		7
			(209.8)	
Jun 12	**Total Expenditure**		**2,048.0**	
Jun 12	**Remaining Budget**		**1,580.4**	

Notes	
1	This project's original DMO budget amount is that prior to achieving Second Pass Government Approval.
2	Incorporation of AIR 9000 Phase 4 (Black Hawk Upgrade/Replacement) and AIR 9000 Phase 6 (Maritime Support Helicopter).
3	The funding related to facilities elements of the project that will be managed by Defence Support Group (DSG).
4	Transfer to DSG for Facilities Infrastructure.
5	Real Cost Increase funding for Full Flight and Mission Simulator Facilities (FFMS).
6	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $556.2m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $123.7m having been applied to the remaining life of the project.
7	Other expenditure comprises: operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned contracts and minor contract expenditure.

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The year end variance ($49.7m) is due primarily to re-planning of FFMS related funding ($19.7m) due to delays in the construction of FFMS facilities and achievement of milestones. Deed negotiations have also resulted in moving payments ($19.3m) for the acceptance of Initial Tranche aircraft into FY2012/13. Reduced Earned Value Management caused by replanning by AA and NATO Helicopter Industries ($11.4m) has also contributed to the underspend. Other minor variations of $0.7m contribute to remaining variance.**
		(30.7)	Overseas Industry	
		(19.0)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
259.5	**209.8**	**(49.7)**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
Australian Aerospace	Jun 05	846.3	2,499.1	VARIABLE	ASDEFCON (Strategic)	1, 2, **3**
CAE Australia	Dec 07	180.5	181.5	VARIABLE	ASDEFCON (Complex)	**4**

Notes	
1	This contract also includes an Electronic Warfare Self Protection Support System, MRH Software Support System, MRH Instrumented System and **23** Ground Mission Management Systems (GMMS) (4 Fixed GMMS, 7 Deployable GMMS, 1 Reduced, 9 Light and 2 interim GMMS). Contract Base date is January 2004.
2	The MRH Instrumented System includes an airborne instrumentation pallet, some ground based instrumentation and three aircraft (from the total fleet of 46) that have provisions to have the instrumentation pallet installed.
3	Previous reporting of the base date value for the Australian Aerospace contract utilised RBA rates, the base date has been amended using **Commonwealth** Base Date rates as detailed in the AIR 9000 Request For Proposal documents.
4	**This contract includes two MRH90 FFMS and the associated facilities (spares, tools etc.).**

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
Australian Aerospace	12	46	MRH90 Aircraft	
CAE Australia	2	2	Full Flight and Mission Simulator	

Major equipment received and quantities to 30 Jun 12
16 MRH aircraft have been accepted to date. Engineering and maintenance arrangements established.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	MRH aircraft - Phase 2	Aug 05	Oct 05	Sep 05	1	1
	MRH aircraft - Phase 4/6	Apr 07	Apr 07	May 07	1	1
	MRH Software Support Centre	N/A	Mar 07	Apr 07	1	

	Electronic Warfare Self Protection Support System	N/A	N/A	Nov 05	N/A	
	Ground based Mission planning and Management System	Oct 05	Oct 05	Feb 07	16	
	MRH Instrumented System	N/A	Jun 07	Jul 07	1	
	Full Flight and Mission Simulators	May 08	Nov 08	Mar 09	9	
System Design	Full Flight and Mission Simulators	Oct 08	Mar 09	Jun 09	8	2
Preliminary Design	MRH aircraft - Phase 2	Jan 06	Jan 06	Apr 06	3	
	MRH aircraft - Phase 4/6	N/A	N/A	Jun 08	N/A	
	MRH Software Support Centre	N/A	Jun 07	Jun 07	0	
	Electronic Warfare Self Protection Support System	Mar 06	Mar 06	May 06	2	
	Ground based Mission planning and Management System	Jul 06	Apr 07	Jun 07	11	
	MRH Instrumented System	N/A	Jun 07	Jul 07	1	
	Full Flight and Mission Simulators	Feb 09	Sep 09	Oct 09	8	
Critical Design	MRH aircraft - Phase 2	May 06	May 06	Jun 06	1	
	MRH aircraft - Phase 4/6	Aug 08	N/A	Oct 08	2	
	MRH Software Support Centre	N/A	Oct 07	Sep 07	(1)	
	Electronic Warfare Self Protection Support System	Sep 06	Sep 06	Oct 06	1	
	Ground based Mission planning and Management System	Nov 06	Nov 07	Jul 08	20	
	MRH Instrumented System	N/A	Jun 08	Jun 08	0	
	Full Flight and Mission Simulators	Aug 09	Feb 10	Apr 10	6	

Notes	
1	Delays in the Systems Engineering process have resulted from the developmental nature of the aircraft system, with the MRH90 variant being unique in some ways.
2	FFMS design review delays stem primarily from slow Contractor derivation of requirements into a suitable System and Subsystem Specification. This was compounded by delays in the prime contractor establishing a vital subcontract with the aircraft **manufacturer**.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	MRH aircraft - Phase 2	Jul 06	Nov 06	Dec 06	5	
	MRH aircraft - Phase 4/6	N/A	N/A	N/A	N/A	**1**
	MRH Software Support Centre	N/A	Oct 08	Nov 08	1	
	Electronic Warfare Self Protection Support System	N/A	N/A	Nov 07	N/A	
	Ground based Mission planning and Management System	N/A	N/A	**N/A**	N/A	**2**
	MRH Instrumented System	Nov 08	May 09	Dec 09	13	**3**
	Full Flight and Mission Simulators	Jun 11	Sept 11	Sep 11	4	**4**

Acceptance	Type Acceptance Review Special Flight Permit 1	Oct 07	**N/A**	Dec 07	2	**5**
	Australian Military Type Certificate	Dec 08	Dec 10	**Nov 12**	**47**	**6**
	Full Flight and Mission Simulators	Mar 13	Mar 13	Mar 13	0	
	Ground based Mission planning and Management System Lot 1	Feb 09	Sep 09	Dec 09	10	**7**
	Ground Mission planning and Management System Lot 2	Feb 09	Dec 09	Apr 10	14	**7**
	Ground Mission planning and Management System Lot 3	**Sep10**	**Sep10**	**Sep12**	**24**	**7**
	MRH Software Support Centre	Feb 09	Feb 09	Dec 08	(2)	
	Electronic Warfare Self Protection Support System	Dec 07	Dec 07	Dec 07	0	
	MRH Instrumented System	Mar 10	Jun 10	**Sep 11**	**18**	**8**
Aircraft Acceptance	MRH aircraft #01 (First aircraft)	Dec 07		Dec 07	0	
	MRH aircraft #05 (First Australian built aircraft)	Dec 08		Dec 08	0	
	MRH aircraft # 16 (Most Recent)	**Jul 10**	**Feb 12**	**Jun 12**	**23**	**9**
	MRH aircraft # 17 (Next aircraft)	**Sep 10**	**Apr 12**	**Sep 12**	**24**	**9**
	MRH aircraft #46 (Final aircraft)	Jul 14	Jul 14	Jul 14	0	**10**

Notes	
1	**Phases 4/6 were rolled into the MRH Program from aircraft 13 onwards, which increased the number of aircraft from 12 to 46.**
2	**The acceptance and test-readiness of the GMMS was broken into six lots post contract signature. The lots compose of GMMS deliverables that have been aligned to aircraft delivery – location and baseline. The acceptance of GMMS lots are listed in the acceptance area of this table.**
3	The 13 month delay to closure of Test Readiness Review was due to electronic compatibility test design issues not resolved until November 2009. This delay was mitigated by the development of an interim MRH Instrumentation System capability used for a test activity in October 2009.
4	**Achieved through completion of Test Readiness Review for Contractor In-Plant Test and Evaluation in Sep 11.**
5	The first Airworthiness Board (for a Special Flight Permit **(SFP)**) was conducted in November 2007 and a SFP was granted in December 2007. **There have been a number of SFP extensions to allow flight trials of the aircraft as it further develops to continue. The most recent SFP was granted in December 2011 and will expire in January 2013.**
6	Achievement of the Australian Military Type Certificate has proved problematic due to insufficient levels of Rate of Effort. Rate of Effort is required to validate that in-service support arrangements for the fleet are sufficient to cope with current numbers of aircraft and are growing in maturity to meet fleet requirements.
7	**Lot 1, 2 and 3 have been altered to accommodate the variation in aircraft delivery date and configuration.**
8	**The MRH instrumented system incurred delays due to technical and supportability issues that resulted in contractual non-conformances. These non-conformances were rectified by September 2011.**

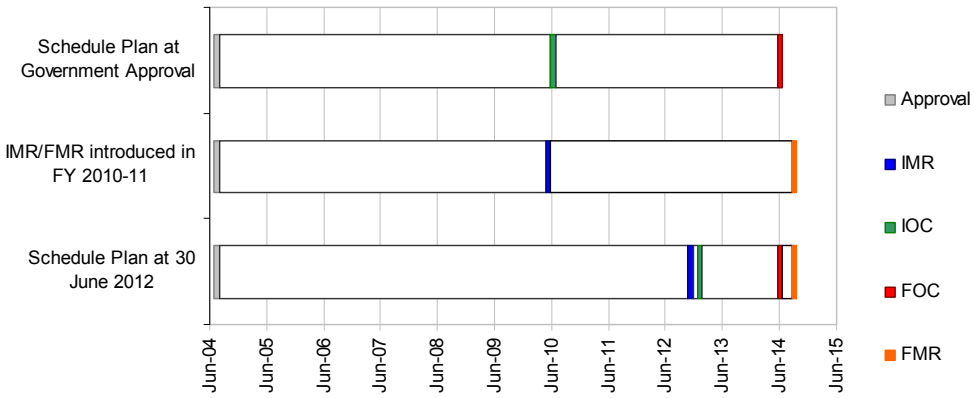
9	**The MRH90 program stopped accepting aircraft in November 2010 as the aircraft did not meet all the contractual requirements. The Commonwealth recommenced accepting aircraft in November 2011 after negotiating a remediation plan to address a number of engineering and contractual issues; however acceptance of aircraft was again suspended in February 2012 pending resolution of another technical concern related to the aircraft's cargo hook. In May 2012 the Commonwealth agreed to accept a further four aircraft based on AA's agreement to the commercial terms associated with the rectification of the cargo hook latent defect. Scheduled aircraft acceptance recommenced in June 2012 with the acceptance of MRH#16.**
10	**It should be noted that the MRH90 program has incurred delays in excess of three years primarily due to technical and supportability issues that have resulted in contractual non-conformances and a reduced aircraft rate of effort. These delays have impacted the delivery of MRH90 capability by deferring the achievement of initial operational milestones as well as technical milestones including the Australian Military Type Certification and Service Release (AMTC/SR). Negotiations are being undertaken to re-baseline aircraft delivery schedules and deliver the capability required by the ADF. Consequently, the final aircraft delivery will be affected by the negotiations, scheduled for completion December 2012.**

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item		Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Army /Navy	Jun 10	**Dec 12**	**30**	**The MRH90 program stopped accepting aircraft in November 2010 as the aircraft did not meet all the contractual requirements. This has impacted the achievement of capability milestones. The Commonwealth recommenced accepting aircraft in November 2011 after negotiating a remediation plan to address a number of engineering and reliability issues; however acceptance of aircraft was again suspended in February 2012 pending resolution of another technical concern related to the aircraft's cargo hook. In May 2012 the Commonwealth agreed to accept a further four aircraft based on AA's agreement to the commercial terms associated with the rectification of the cargo hook latent defect. Scheduled aircraft acceptance recommenced in June 2012 with the acceptance of MRH#16.**

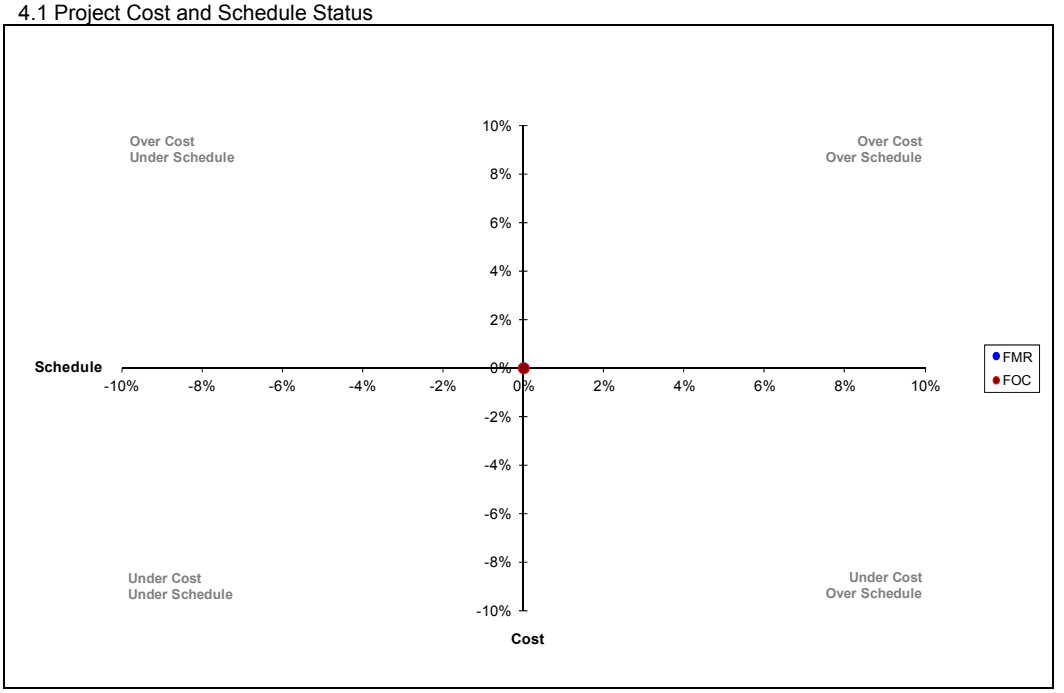
Initial Operational Capability (IOC)	Navy	Jul 10	**Feb 13**	**31**	**Affected by delays to IMR.**
	Army	Apr 11	**Mar 14**	**35**	**Affected by delays to IMR**
Final Materiel Release (FMR)	Army /Navy	Oct 14	Oct 14	0	**FMR and FOC dates are currently subject to review based on the re-baselining of aircraft delivery as part of Deed two negotiations.**
Final Operational Capability (FOC)	Navy	Dec 12	Dec 12	0	**FMR and FOC dates are currently subject to review based on the re-baselining of aircraft delivery as part of Deed two negotiations.**
	Army	Jul 14	Jul 14	0	**FMR and FOC dates are currently subject to review based on the re-baselining of aircraft delivery as part of Deed two negotiations.**

Schedule Status at 30 June 12



Section 4 – Project Cost and Schedule Status

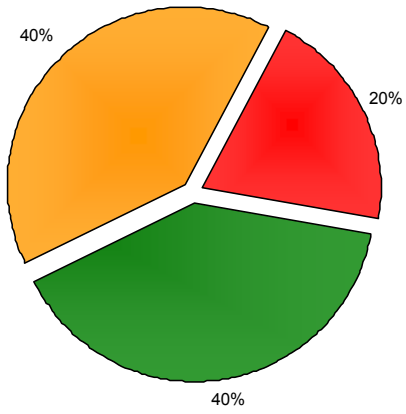
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Green:

The project is currently meeting the capability requirements as expressed in the suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities.

Amber:

The achievement of FMR is directly linked to IMR and may subsequently be delayed dependent on the outcomes of Deed negotiations with Australian Aerospace to address engineering and reliability issues.

Red:

Due to Australian Aerospace's inability to deliver conforming supplies, **the** first maritime and land operational capabilities **were** not achieved by the scheduled date. The outcomes of ongoing negotiations will determine to what degree and timeframe the PMS will be achieved.

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that Acceptance of aircraft will be affected by Voids and Porosities in the tail sections of aircraft leading to an impact on schedule, cost, performance, quality and safety.	**The Commonwealth has approved a nil cost CCP for Australian Aerospace to thermo-graphically inspect all aircraft prior to Acceptance. Should any Void and Porosity develop into a Latent Defect, Australian Aerospace will rectify in accordance with the Contract. Consequently, this risk has been retired.**
There is a chance that Transition Stage Aircrew Training objectives will be affected by the failure of the Commonwealth to generate the required Rate Of Effort (ROE) prior to Australian Military Type Certificate (AMTC).	**ROE generation is now managed by MRH Logistics Management Unit as an in-service issue. The management of aircrew training priorities is implemented by Directorate of Army Aviation Capability Management. Additionally, a ROE Steering Group has been set up to address ROE issues. MRH Project Office does not directly participate in these activities. The management of this risk has transitioned to in-service organisations. Consequently this risk has been transferred to the in-service organisation.**
There is a chance that the AMTC/Service Release milestones will be affected by outstanding capability issues and unresolved defects and delays in delivery of planned solutions leading to an impact on performance, schedule and supportability.	**1. Extension of Black Hawk Life of Type;** **2. Work with Industry to increase spares holdings; and** **3. Verification and Validation / Air Worthiness Issue Paper closure.**
There is a chance that operational capability milestones will be affected by a number of cabin integration issues, leading to an impact on cost, schedule and performance.	**1. Formation of Cabin Integration Working Group;** **2. Industry Prototyping;** **3. Accept incremental improvements;** **4. Use of Liquidated Damages as offset; and** **5. Leverage NATO Helicopters 90 (NH90) community solutions.**
There is a chance that Troop carrying capability will be affected by the troop seat anthropometric issues leading to an impact on operational and capability milestones.	**1. Perform analysis to understand limitations;** **2. Heavy stakeholder engagement to understand requirement and limitations;** **3. Determine appropriate strategy to address requirements and limitations; and** **4. Identify commercial options to implement strategy.**
There is a chance that an MRH90 Sustainment Training contract will not be in place in time to support MRH90 Sustainment Training to commence from beginning 2013 leading to an impact on cost, schedule and performance.	**If this risk occurs there will be an immediate requirement to implement further extension to Transition Stage Training (TST) arrangements with Australian Aerospace. This will incur additional cost.** **Implementation of additional interim measures including Contractor instructor support for Initial Employment Training Technician Training in RAEME Aircraft Maintenance School.**

There is a chance that the MRH90 navigational capability will be affected by the inability to resolve technical failures associated with the Inertial Reference System (IRS) leading to an impact on performance.	**Software and Hardware (Magnetic Anomaly Detector) being implemented by AA. Planned for completion by October 2013 with earlier rectification possible.**
Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
N/A	**N/A**

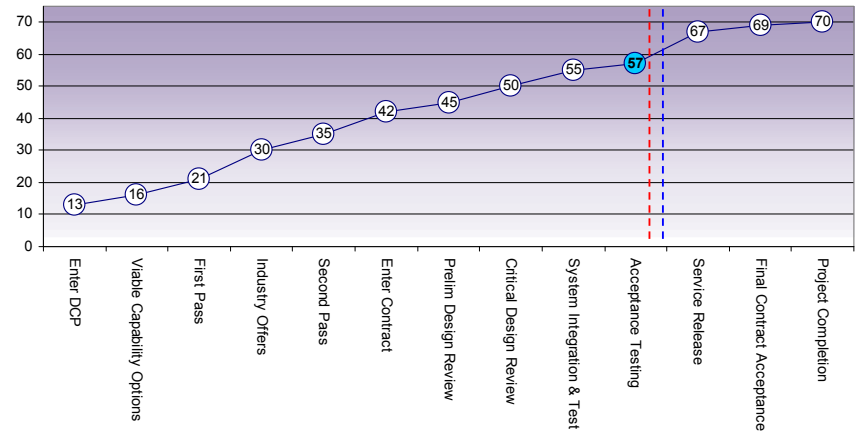
6.2 Major Project Issues

Description	Remedial Action
The technical and flight operational airworthiness will be affected by the immaturity of the MRH90 flight manual for Service Release leading to an impact on schedule, performance and supportability.	**The Commonwealth has contracted AA to produce an Australianised Aircrew Information Set (AAIS). This activity is nearing completion as such this issue is no longer considered to be Major in nature. This issue has been downgraded to minor in nature.**
The operational capability will be affected by delays in resolution of the cargo hook non-conformance, leading to an impact on cost, schedule and performance	**Under investigation by industry, awaiting delivery of a deviation request by AA.**
The Deed negotiations will take significantly longer than originally anticipated causing an extended delay to aircraft acceptance and the overall program.	**1. External legal support is being utilised as well as additional resources to support negotiation.** **2. Maximise current Commonwealth leverage to achieve the best possible outcome in the Sustainment and Acquisition Contract for the remainder of the life of the two contracts.** **3. Work closely with AA to rectify the technical and contractual issues.**
The test program will be affected by competing priorities because of limited airframe/aircrew resources which will result in delayed identification of issues, resolution of identified issues and delayed subsequent Operational Test and Evaluation activities leading to an impact on schedule.	**1. Continue to closely manage test activities in consultation with other agencies, prioritising activities to support subsequent events.** **2. Outsource work where appropriate.** **3. Consider posting of key staff ahead of end of year.** **4. Try to balance test crews to maximise efficiency in test activities.** **5. Manage tasking/ workload and seek additional support overall as required.**
The schedule to achieve Service Release will be affected by IRS reliability issues, which has impacted schedule, supportability and performance.	**Some issues expected to be fixed by PBL03 software baseline. Testing to confirm. Industry investigating reliability issues associated with production.**
The Service Release and Operational capability will be affected by the Fast Roping Rappelling Device being deemed not suitable leading to an impact on schedule and performance.	**Under investigation.**

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	8	8	8	8	9	8	8	57
Acceptance Testing	Project Status	10	**7**	10	**9**	8	**6**	9	**59**
	Explanation	• **Schedule: Achieved MRH90 ISD.** • **Cost**: **Not all risks have been retired; however the estimate at completion to mitigate remains within contingency guidance**. • **Requirement:** The MRH System design and acceptance testing phases being essentially complete. Additionally, the project office, with Navy and Army, is conducting validation trials to demonstrate that the system meets in-service requirements. • **Technical Understanding: The knowledge necessary to operate and support the platform is being transferred to the in-service providers; however this is ongoing due to technical concerns.** • **Technical Difficulty:** Capability is still being tested fully due to the immaturity of elements of the capability. • **Commercial: The Commonwealth recommenced accepting aircraft in November 2011 after negotiating a remediation plan to address a number of engineering and reliability issues; however acceptance of aircraft was again suspended in February 2012 pending resolution of another technical concern related to the aircraft's cargo hook. In May 2012 the Commonwealth agreed to accept a further four aircraft based on AA's agreement to the commercial terms associated with the rectification of the cargo hook latent defect. Scheduled aircraft acceptance recommenced in June 2012 with the acceptance of MRH#16.** • **Operations and Support:** The MRH System has commenced progressive transition from the acquisition environment to the in-service support and operational organisations.							



2010-11 DMO MPR Status - - - -	2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Early establishment of the Sustainment organisations. Both Commonwealth and Industry teams need to be set up well in advance of the delivery of the first of type for projects. The provision of accepted aircraft to an Operational Squadron has led to a range of lessons in regard to command and control of assets and people, stakeholder management and the relationship with Industry.	Resourcing
The impact of attaining limited Intellectual Property rights has been critical to the ongoing development of the capability and achievement of value for money in further contract negotiations. It has also limited the provision of data for integration with other platforms (such as the Landing Helicopter Deck ships).	Contract Management
The MRH Project was viewed as a Military off-the-Shelf (MOTS) acquisition. Lessons associated with MOTS procurements include: that it is essential that the maturity of any offered product be clearly assessed and understood; and that elements of a chosen off-the-shelf solution may not meet the user requirement.	Off-the-shelf Equipment

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	RADM Mark Campbell
Branch Head	BRIG Andrew Mathewson
Project Director	COL Ron Dempster
Project Manager	**LTCOL Jeremy King (Jul 11–Jan 12)** **LTCOL James Allen (Jan 12–current)**

Project Data Summary Sheet[235]

Project Name	**BRIDGING AIR COMBAT CAPABILITY**
Project Number	**AIR 5349 Ph 1 and 2**
Capability Type	Replacement
Service	Royal Australian Air Force
Government 1st Pass Approval	Mar 07
Government 2nd Pass Approval	Mar 07
Total Approved Budget (Current)	**$3,538.5m**
2011-12 Budget	**$128.6m**
Project Stage	Phase 1 Service Release
	Phase 2 System Integration and Test
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

The Bridging Air Combat Capability Project **provides for the** acquisition of 24 Boeing F/A-18F Super Hornets, associated weapons, support, and training systems to establish a bridging air combat capability **for the Australian Defence Force**.

Phase 1 of the project **has acquired and delivered all 24 Super Hornets** and associated support and training systems.

Phase 2 of the project will acquire the associated missile suite including; AIM-9X Within Visual Range Air-to-Air Missiles (AIM-9X), AGM-154C & C-1 Joint Stand-Off Weapons (JSOW C and C-1), AIM-120C-7 Advanced Medium Range Air-to-Air Missiles (AMRAAM) and new Infra-Red Flares in support of the Super Hornet aircraft.

1.2 Current Status

Phase 1	**Cost Performance** **As at 30 June 2012, project AIR 5349 Phase 1 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.**

[235] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

	Schedule Performance The project remains on schedule to meet Final Operational Capability by December 2012. **AIR 5349 Phase 1 is scheduled to achieve Final Materiel Release in the next reporting period following the delivery of the final 4 aircraft, engineering, maintenance, and training arrangements which are currently awaiting declaration by Capability Manager. Aircraft are in operation at both 1 and 6 Squadrons based at Royal Australian Air Force (RAAF) Base Amberley.** The necessary engineering, maintenance, supply and training arrangements to support aircraft operations and aircrew training within Australia have also been established.
	Materiel Capability Performance The **F/A-18F** Super Hornets have been granted Australian Military Type Certification and all **24** aircraft have been entered on the State Register and released from the DMO to the RAAF. **All** aircraft have a comprehensive electronic warfare suite, advanced infra-red/laser pods, external fuel tanks, aerial refuelling stores and an Active Electronically Scanned Array (AESA) radar. **In addition**, a towed decoy jammer, ALE-55, is planned for delivery prior to December 2012. The Super Hornets are able to **deploy** the AIM-9X and AMRAAM C5 air-to-air missiles, and JSOW-C weapons being procured under Phase 2 of the project along with a range of weapons already in the Air Force's weapons **armoury**. Two tactical flight simulators and two cockpit procedural trainers **have been** delivered to provide aircrew training.
Phase 2	**Cost Performance** **As at 30 June 2012, project AIR 5349 Phase 2 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.**
	Schedule Performance The project successfully achieved Initial Operational Capability (IOC) in December 2010 and is on schedule to achieve Final Material Release (FMR) by August 2012 and **Final Operational Capability (FOC) is scheduled for** December 2012. The AIM-9X and JSOW C have been transitioned into service. **United States Air Force (USAF) programmatic decisions have delayed the production of Australia's AMRAAM C-7s, with subsequent delays to final deliveries. JSOW C-1 is currently on schedule to meet its Materiel Acquisition Agreement (MAA) timeframes.**
	Materiel Capability Performance The AIM-9X and JSOW C have been delivered, certified, and are in service. **The entire AIM-120 B and C-5 AMRAAM inventory has** been upgraded to be compatible with Super Hornet. The United States Navy (USN) **has completed development testing of JSOW C-1 and integrated testing** is progressing to schedule.

1.3 Project Context

Project	Explanation
Background	In November 2006, Government directed Defence to develop options to de-risk the transition from the current Australian Defence Force air combat capability to the new air combat capability being acquired under Project AIR 6000. To achieve this, Defence established Project AIR 5349 to acquire a bridging air combat capability for the ADF. In March 2007, Government approved the acquisition and sustainment of 24 F/A-18F Super Hornet aircraft and associated weapons, support, and training systems. Under Phase 1 of the project, 24 F/A-18F Super Hornet aircraft and associated training and support systems were to be acquired primarily through Foreign Military Sales (FMS) Cases with the United States (US) Government. The 24 F/A-18F Super Hornet aircraft were acquired with alternate mission equipment; electronic warfare equipment including an Australian-unique data library, targeting pods; communication and navigation suites. The training systems include tactical flight simulators (known as Tactical Operation Flight Trainers), cockpit procedural trainers (known as Low Cost Trainers), and maintenance training simulators (known as Integrated Visual Environment Maintenance Trainers).

	Support systems being acquired include an automated maintenance environment, support and test equipment to operate and maintain the aircraft, initial aircrew and maintenance training; and the provision for three years worth of repairable items and breakdown spares, including fly-away-kits. Phase 2 of the project will acquire quantities of AIM-9X Sidewinder missiles and new variants of AIM-120 AMRAAM missiles to provide both a Within and Beyond Visual Range missile capability; and the AGM-154 JSOW capability. In order to maintain JSOW commonality with USN, a limited quantity of JSOW C weapons were procured for IOC, with the remainder being the updated version JSOW C-1. Phase 2 is also scoped to acquire a trial quantity of Infra-Red (IR) flares in order to achieve IOC. Further quantities of AIM-9X Captive Air Training Missiles to meet ongoing training requirements have been acquired. Phase 2 was also directed to undertake additional certification and integration activity of the current ADF AIM-120 AMRAAM inventory on to the F/A-18F to achieve IOC. Phase 2 will provide JSOW C and post Software Upgrade (SWUP) 08 AMRAAM to support the Super Hornet FOC currently scheduled for December 2012. Further delivery of new missile variants for JSOW and AMRAAM will occur after this milestone. These are highlighted in the Project Event and Supplies Delivery Schedule. These two events will ensure the effectiveness of the weapons system for the life of the capability is maintained.
Uniqueness	The F/A-18F Super Hornets represent a Military-Off-The-Self aircraft acquisition. The aircraft are common with USN F/A-18F Super Hornets with the only significant configuration difference being the inclusion of a civilian-compatible Instrument Landing System and the Australian-unique data library. The F/A-18F Super Hornets was a directed Government solution resulting from a combined first and second pass project approval process. The timeframe between the Government approval of the project and the Initial Operational Capability date is significantly shorter than for other major aerospace acquisitions. The majority of acquisition activity for the aircraft and support equipment is being undertaken through a US FMS case. Acquisition of the weapons suite is being undertaken using several US Foreign Military Sales (FMS) cases. The weapons being procured under Phase 2 are continually monitored to ensure the ADF receives the most up to date, USN common weapon, as defined by Government. All the weapons being procured under Phase 2 are new to the ADF.
Major Challenges	Whilst the aircraft are Military-Off-The-Self aircraft the acquisition of the training and support systems needed requirements definition and design development activities so that they could be integrated into existing Australian operational and sustainment infrastructure. Project currently managing the delivery of facilities and Support and Test Equipment to an aggressive timeline to sustain initial flying operations in Australia. Procurement of leading edge weapons via FMS is reliant on development schedules, which induce schedule risk that DMO has limited ability to mitigate. Whilst weapons are MOTS, there is a requirement for necessary data to be provided to enable RAAF certification. The pace of this acquisition provided challenges for USN to supply associated data in the necessary timeframes.
Other Current Projects/Sub-Projects	**N/A**

1.4 Linked Projects

Project	Description of Project	Description of Dependency
AIR 5402 Air to Air Refuelling Capability	Provision of five Multi-Role Tanker Transport aircraft and associated supplies and support.	Air-to-air refuelling support for extended range/duration missions.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Mar 07	Original Approved Phase 1 & Phase 2		3,728.2	
Phase 1				
Mar 07	Original Approved Phase 1		3,545.8	
Jul 08	Phase 1 Real Variation – Transfers	(33.3)		1
May 11	Real Variation – Budget Transfer to Phase 2	(99.0)		2
May 11	Real Variation – Real Cost Decrease	(107.2)		3
			(239.5)	
Jul 10	Phase 1 Price Indexation		367.3	4
Jun 12	Phase 1 Exchange Variation		**(407.2)**	
Jun 12	**Total Budget**		**3,266.4**	
Phase 2				
Mar 07	Original Approved Phase 2		182.4	
Jun 11	Real Variation – Transfer from Phase 1	99.0		1
Jul 10	Price Indexation		23.9	4
Jun 12	Exchange Variation		**(33.2)**	
Jun 12	**Total Budget**		**272.1**	
	Total Budget Phase 1 & Phase 2		**3,538.5**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – US Government Phase 1 (Aircraft)	**(2,484.6)**		
	Contract Expenditure – US Government Phase 2 (Weapons)	**(102.0)**		
	Other Contract Payments / Internal Expenses (Phase 1)	**(105.5)**		5
	Other Contract Payments / Internal Expenses (Phase 2)	**(1.4)**		6
			(2,693.5)	
FY to Jun 12	Contract Expenditure – US Government Phase 1 (Aircraft)	**(85.1)**		
	Contract Expenditure – US Government Phase 1 (ACMI)	**(6.2)**		
	Contract Expenditure – US Government Phase 2 (Weapons)	**(19.8)**		
	Other Contract Payments / Internal Expenses (Phase 1)	**(15.4)**		**7**
	Other Contract Payments / Internal Expenses (Phase 2)	**(0.3)**		6
			(126.8)	
Jun 12	**Total Expenditure**		**(2,820.3)**	
Jun 12	**Remaining Budget**		**718.2**	

Notes	
1	Guidance transfer to DSG Facilities element.
2	Real Cost Decrease Phase 1 - budget transfer to AIR 5349 Phase 2 ($99.0m) for Super Hornet Weapons.
3	Real Cost Decrease return to Portfolio ($107.2m).
4	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative

	impact of this approach for Phase 1 was $351.4m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $15.9m having been applied to the remaining life of the project. The cumulative impact of this approach for Phase 2 was $20.6m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $3.3m having been applied to the remaining life of the project.
5	Other expenditure comprises: operating expenditure, contractors, contingency, other capital expenditure not attributable to the aforementioned contract and minor contract expenditure.
6	'Other' cost is a combination of overseas and domestic travel, Professional Service Providers, Freight and General Administration.
7	**Other (Phase 1) expenditure comprises: International Global Supply Chain Solution contribution $2.7m, Salaries $2.4m, Air Combat Transition Office travel $2.1m, CIOG Transfer for Advanced Flight Replay Tool and Automated Maintenance Environment $1.9m, Commercial Procurement Cargo Pod $1.1m, Project Office Travel $0.9m, Operating Costs $0.8m, miscellaneous low value procurements $3.5m.**

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		2.8	FMS	**Phase 1 FMS payments were less than planned as prime FMS contract payments to United States Navy to date are ahead of actual disbursements/deliveries. The underspend was lessened due to the ability to utilise funds to procure spares in support of the Joint Helmet Mounted Cueing System. Automated Maintenance Environment and support and test equipment spend of $3m has been moved to FY12/13.**
			Overseas Industry	
		(3.0)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(1.6)	Commonwealth Delays	**Delay in Commonwealth contracting for Evan's Head remediation work ($1.5m) and small value contracts caused slippage of $1.6m to FY12/13.**
128.6	**126.8**	**(1.8)**	**Total Variance**	**Phase 2 The end of year variation of $0.1m is due to the delay in commencement of production and installation of the Precision Strike Targeting Local Area Network (PSTL) due to design and development delays. This has been reprogrammed to FY12/13.**

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
(Phase 1) US Government	May 07	2,850.3	2,850.5	FMS	FMS	
(Phase 1) US Government	**Jun 11**	**19.7**	**19.7**	**FMS**	**FMS**	**1**
(Phase 2) US Government	Aug 06 Oct 07 Mar 08 Jun 08 Mar 09 May 09 **Oct 11**	**226.7**	**229.9**	FMS	FMS	2

Notes	
1	**This FMS case is to procure Air Combat Manoeuvring Instrumentation capability which was identified as a Baseline Confirmation Proposal.**
2	Various Signature Dates reflect different FMS acquisition cases however their prices have been

	combined due to classification.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
US Government	24	24	F/A-18F Super Hornet Aircraft.	
US Government	**20**	**20**	**Air Combat Manoeuvring Instrumentation pods.**	
US Government	Classified	Classified	• AIM-9X CATM, operational and telemetry missiles, technical assistance and data; • JSOW C operational and telemetry missiles, technical assistance and data; • JSOW C-1 operational and telemetry missiles, technical assistance and data; • Trial quantity of Infra-Red Flares and technical data; • Extant AMRAAM missiles software modification and test, technical assistance and data.	1

Major equipment received and quantities to 30 Jun 12	
Phase 1	**Twenty Four** aircraft have been delivered. Engineering, maintenance, and training arrangements established.
Phase 2	AIM-9X CATM, AIM-9X and JSOW C operational and telemetry missiles, infra-red flares.
Notes	
1	Quantities are classified.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant		Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Software Design	Phase 1	Aircraft Software	Feb 08		Feb 08	0	
	Phase 2	Weapons	N/A	N/A	N/A	N/A	1
System Requirements	Phase 1	Aircraft	N/A		N/A	N/A	2
		Automated Maintenance Environment	Oct 08		Oct 08	0	
		Electronic Warfare Data Library	Jul 08		Jul 08	0	
		Tactical Operation Flight Trainers	Oct 08		Oct 08	0	
		Low Cost Trainers	Oct 08		Oct 08	0	
		Integrated Visual Environment Maintenance Trainers	Oct 08		Oct 08	0	
	Phase 2	Weapons	N/A	N/A	N/A	N/A	1

Preliminary Design	Phase 1	Aircraft	N/A		N/A	N/A	2
		Automated Maintenance Environment	Nov 08		Nov 08	0	
		Electronic Warfare Data Library	Oct 08		Dec 08	2	3
		Tactical Operation Flight Trainers	Apr 09		Mar 09	(1)	4
		Low Cost Trainers	Apr 09		Mar 09	(1)	4
		Integrated Visual Environment Maintenance Trainers	Jan 09 – Oct 09		Jan 09 – Oct 09	0	5
	Phase 2	Weapons	N/A	N/A	N/A	N/A	1
Critical Design	Phase 1	Aircraft	Jul 08		Sep 08	2	6
		Automated Maintenance Environment	Feb 09		Mar 09	1	7
		Electronic Warfare Data Library	Dec 08		Jul 09	7	
		Tactical Operation Flight Trainers	Apr 09		Mar 09	(1)	
		Low Cost Trainers	Apr 09		Mar 09	(1)	
		Integrated Visual Environment Maintenance Trainers	Jan 09 – Oct 09		Jan 09 – Oct 09	0	
	Phase 2	Weapons	N/A	N/A	N/A	N/A	1

Notes	
1	All missiles acquisitions within the Scope of Phase 2 are MOTS – **all** reviews were completed by the US Government prior to Commonwealth acquisition.
2	No Aircraft Systems Requirement Review or Preliminary Design Review for the project as the aircraft is a MOTS design.
3	The Electronic Warfare data library preliminary design review was delayed due to the USN adopting a new design process, and the issue of classified data being unable to be released.
4	Preliminary and Critical Design Reviews were combined to meet delivery targets.
5	The Integrated Visual Environment Maintenance Trainers follow a spiral development path with several combined Preliminary/Critical Design Reviews beginning in January 2009 and continuing through until October 2009.
6	The Aircraft Critical Design Review was delayed due to the Instrument landing System integration requiring re-design.
7	The Critical Design Review for the Automated Maintenance Environment slipped by one week.

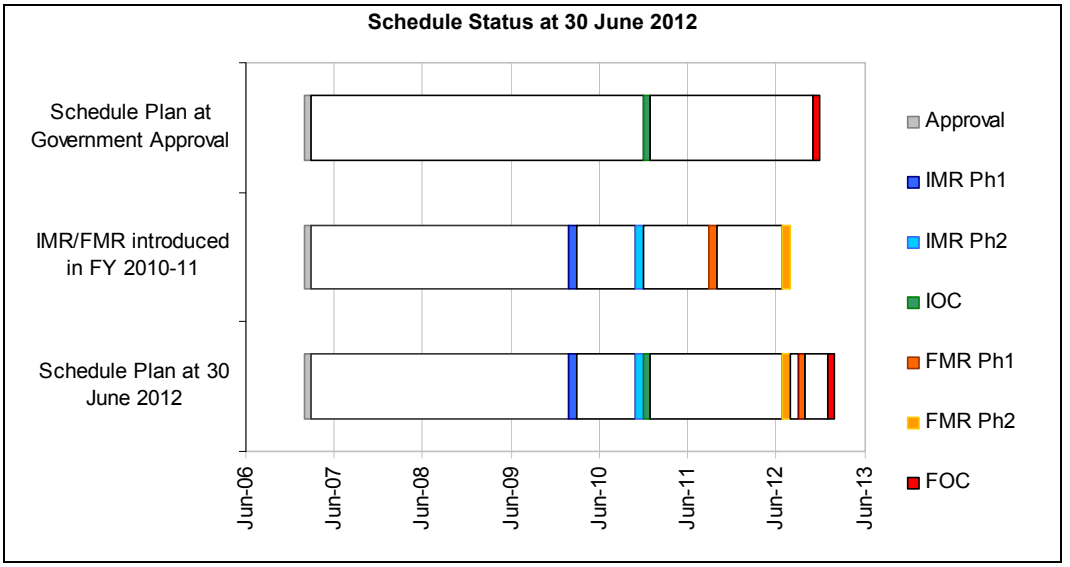
3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant		Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Phase 1	Instrument Landing System Antennae Qualification	Jul 08		May 09	10	1
		Instrument Landing System - Aircraft Integration Test	Jan 09 – Mar 09		May 09 – Jun 09	3	2
		Aircraft Software Integration	Mar 09 – Jul 09		Mar 09 – Dec 09	5	3
		Electronic Warfare Data Library	Mar 09		May 10	14	4
		Automated Maintenance Environment	Aug 09		Aug 09	0	
	Phase 2	JSOW-C, JSOW C-1, AIM-9X and AMRAAM	N/A	N/A	N/A	N/A	5
Acceptance	Phase 1	Lot 32 Aircraft Production Test (Boeing) – 12 Aircraft	Jul 09 – May 10		Jul 09 – May 10	0	
		Lot 33 Aircraft Production Test (Boeing) – 12 Aircraft	Aug 10 – Jul 11		Aug 10 – Jul 11	0	
		Aircraft Post-Production Test and Evaluation (USN)	Jul 09 – Oct 09		Jul 09 – Dec 10	14	6
		Electronic Warfare Data Library	May 09		Jun 10	13	7
		Automated Maintenance Environment	Aug 09		Aug 09	0	
		Tactical Operation Flight Trainers #1 (On-Site Test)	Mar 10		May 10	2	8
		Low Cost Trainers	Feb 10		May 10	3	9
		Visual Environment Maintenance Trainers	Sept 09		Oct 09	1	10
		Computer Based Training Classrooms	Nov 09		Dec 09	1	
	Phase 2	AIM-9X	Mar 10		Mar 10	0	
		JSOW C	N/A		Feb 10	0	11
		JSOW C-1	Mar 10	Jun 13	Jun13	39	12 & 13
		AMRAAM C-7	Dec 11	**TBC**	**TBC**	**N/A**	

Notes	
1	Instrument Landing System antennae qualification and integration tests delayed due to a test failures of the antennas and the need to redesign.
2	Airframe Integration Test – Slip due to failure of Instrument Landing System antennae.
3	Software Integration – classified.
4	The Electronic Warfare data library testing was delayed due to the USN adopting a new design process, and the continuing issue of classified data being unable to be released.
5	Integration of weapons onto aircraft is within the scope for AIR 5349 Phase 1.
6	Post-production test and evaluation affected by the delays in the instrumented landing system qualification and aircraft software integration. The fourteen month delay related to the first aircraft which remained in the US under USN custody for Contractor rectification testing with the avionics issue and USN weapon risk mitigation activity.
7	Thirteen month delay due to System Integration failures and delays with USN development.
8	Two month variance due to delays in the US Government data release approval process and approval required for US export of equipment.
9	Three month delay due to late delivery of Low Cost Trainer facility at Amberley.
10	One month variance due to delays in the US Government data release approval process and approval required for US export of equipment.
11	Due to JSOW C-1 slippage, JSOW C was acquired to meet December 2010 IOC requirement.
12	Deliveries of post FOC weapons are a result of the spiral acquisition process. This is inherent in a modern weapons project whereby new weapons will be procured following discontinued production runs of the JSOW-C and AMRAAM C-5 weapons variant.
13	Reflects up to 39 months delay in US program of JSOW C-1, noting original planned date was based on USN advice prior to full disclosure of USN development schedule. JSOW C missiles were purchased to provide required IOC/FOC capability of JSOW C-1. Since acquisition of JSOW C meets the IOC/FOC requirement of JSOW C-1 (March 2010), actual delay should be considered as post FOC, December 2012 (6 months).

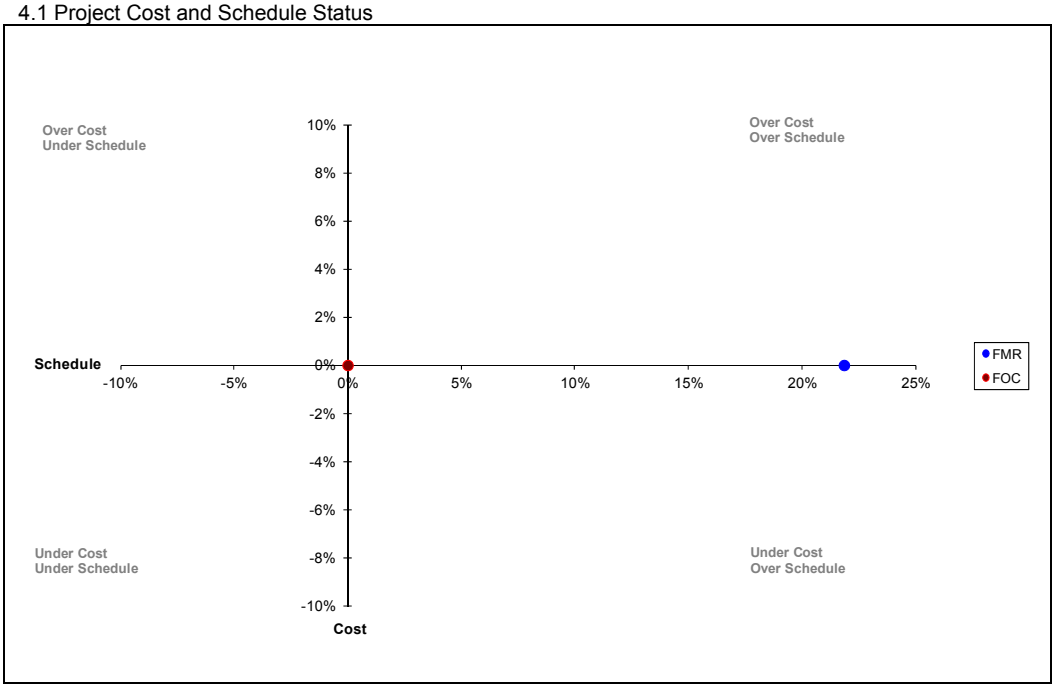
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item		Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Phase 1	N/A	Mar 10	N/A	
	Phase 2	N/A	Dec 10	N/A	
Initial Operational Capability (IOC)	Phase 1	Dec 10	Dec 10	0	
	Phase 2	Dec 10	Dec 10	0	
Final Materiel Release (FMR)	Phase 1	Oct 11	**Oct 12**	**12**	**Twenty Four aircraft have been delivered. Engineering, maintenance, and training arrangements established however FMR is yet to be declared by Capability Manager.**
	Phase 2	Aug 12	Aug 12	0	
Final Operational Capability (FOC)	Phase 1	Dec 12	Dec 12	0	
	Phase 2	Dec 12	Dec 12	0	



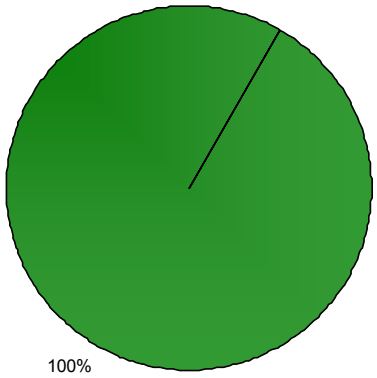
Section 4 – Project Cost and Schedule Status (Combined Phase 1 & Phase 2)

4.1 Project Cost and Schedule Status

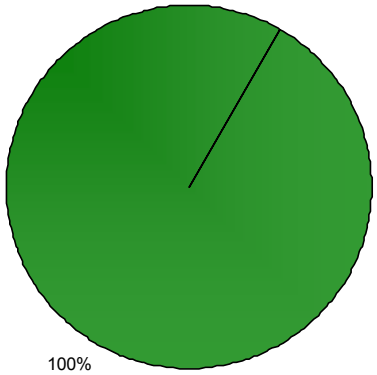


Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance Phase 1 (Aircraft)

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	**Green:** The Super Hornet is meeting its capability objectives. Identified anomalies, limitations and improvements of the USN common aircraft software, radar, electronic warfare, mission planning, and training devices are being fed back into the USN spiral development program as part of Super Hornet sustainment, and RAAF/DMO are accessing opportunities to influence USN decision makers on the priority for addressing these areas under a RAAF/USN common paradigm. **Amber:** N/A **Red:** N/A

5.1 Measures of Materiel Capability Performance Phase 2 (Weapons)

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	**Green:** The Project is currently meeting capability requirements as expressed in the suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities. **Amber:** **N/A** **Red:** N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)		
	Description	Remedial Action
Phase 1	**N/A**	**N/A**
Phase 2	There is a chance that delivery of JSOW C-1	JSOW C has been delivered and tested which

	is delayed.	provides a JSOW capability until delivery of JSOW C-1 is completed. JSOW C-1 production schedule is being closely monitored to identify any potential delays.
	There is a chance that USN/Raytheon have insufficient Telemetry Instrumentation Kits (TIK) to support Raise Train Sustain firings of JSOW C/C-1.	Options are: a. Reduce requirement for in-service firings. b. Investigate use of alternative test variant and/or alternative range safety approach. **c. Request access to the USN/Raytheon joint engineering study to develop a new JSOW TIK.** **d. The remediation action will mitigate the risk and down grade the risk to medium.**
	There is a chance that there are software integration issues with JSOW-C1 on Super Hornet.	The project office seeks regular updates on USN program in order to identify and address this risk before it materialises. **Contingency has been allocated**.
Emergent Risks (risk not previously identified but has emerged during 2011-12)		
	Description	Remedial Action
Phase 1	**There is a possibility that the Super Hornet will not be certified to tank from the KC-30A by Final Operational Capability because of delayed delivery of RAAF Air-To-Air capability, leading to an impact on performance.**	**Two stage strategy: First stage is Partial Clearance followed by Full Clearance activity.**
	There is a possibility that the Forward Looking Infra Red performance will be degraded.	**Engineering Change Proposal No 35 will introduce an Electronic Image Stabilisation Card.**
Phase 2	**There is a chance that technical or US programmatic issues will delay availability of some Australian Super Hornet weapons.**	**Closely engage with the US authorities who are managing the Australian Super Hornet weapon programs.**

6.2 Major Project Issues

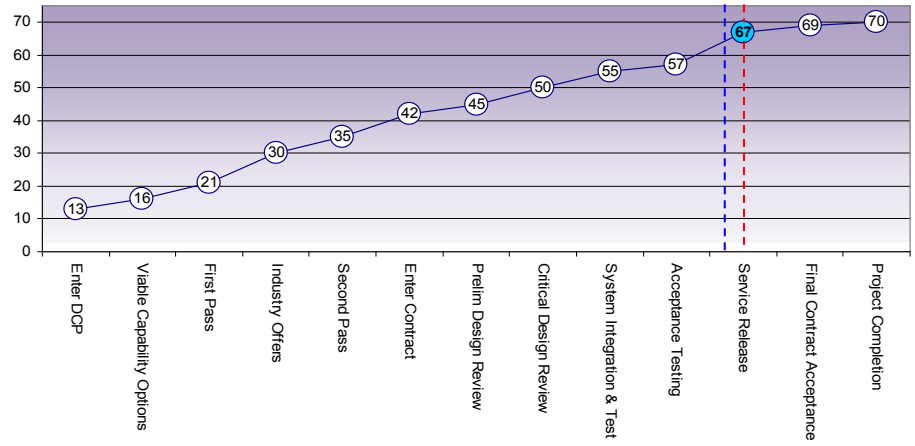
Description		Remedial Action
Phase 1	**Spares availability has been affected by late delivery of spares because of OEM delays and USN delays in award of Supplier contracts leading to an impact on performance, supportability and schedule.**	**Strategy to deliberately expedite acquisition deliverables including:** **1. prepare list of USN accepted "Not Complete" NIINs;** **2. prioritise outstanding items in conjunction with BDA;** **3. note items not on contract (USN to BSTL);** **4. suggest feasible options to speed up supply; and** **5. expedite USN contracting and delivery schedule.**
	Delay in delivery of AMRAAM C-7 in Lot 26 due to a programmatic decision made by the USAF.	**Elevate to senior management.** **Accept schedule delay and ensure USAF honours its commitment to Australia for future deliveries.** **This issue has been reassessed by the project and has been retired.**

Phase 2	**Technical and personnel issues are affecting Phase 2 outputs.**	**Logistic and technical solutions are being implemented to address the issues.** **The issue has been reassessed by the project and has been retired.**

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark Phase 1 (Aircraft)

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	10	9	10	10	10	9	9	67
Service Release	Project Status	10	**9**	10	10	10	**9**	9	**67**
	Explanation	**N/A**							

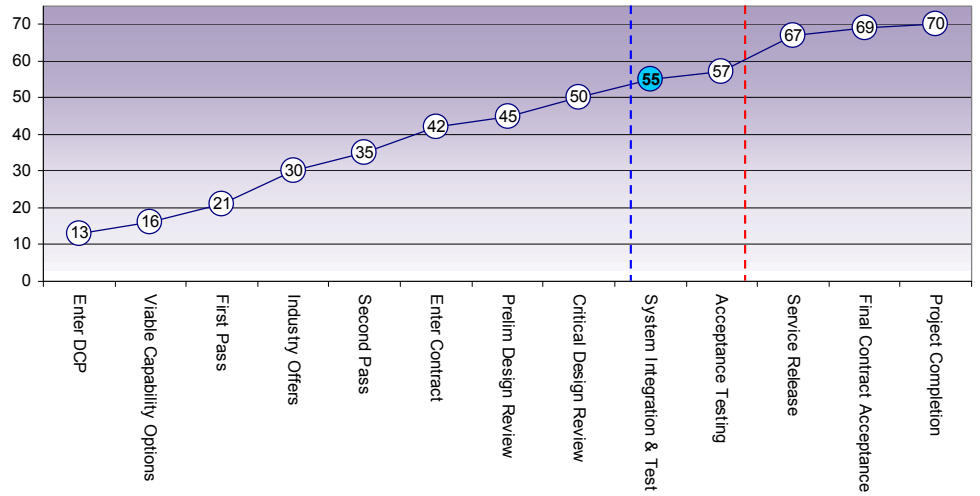


2010-11 DMO MPR Status - - - -

2011-12 DMO MPR Status - - - -

7.1 Project Maturity Score and Benchmark Phase 2 (Weapons)

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	8	7	8	8	8	8	8	55
System Integration and Test	Project Status	**9**	8	**9**	8	8	**9**	**9**	**60**
	Explanation	• **Schedule:** Project has delivered AIM-9X and JSOW C and is in contract to **procure** JSOW C-1 in 2013 and **has accepted the FMS Case for AIM-120C-7 AMRAAM.** • **Cost:** The project is well on track to meet the budgeted forecast for the project. • **Requirement: The project has delivered AIM-9X and JSOW C, the JSOW C-1 and AIM-120C-7 have been designed, and are in test with the USG. The aggregate requirements maturity score in 9.** • **Commercial: The project has delivered AIM-9X and JSOW C, the JSOW C-1 and AIM-120C-7 are on contract via FMS and are being delivered under an updated schedule. The aggregate commercial maturity score in 9.** • **Operations and Support:** The Project is currently in the process of acquiring JSOW C-1 and AMRAAM C-7. DMO's current method for calculating Project Maturity does not fully accommodate projects acquiring multiple designs.							



2010-11 DMO MPR Status - - - -

2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson		Categories of Systemic Lessons
Phase 1	A reasonable presence of Australian Super Hornet Project Staff in the US is required to enable the Commonwealth adequate insight, influence and progress reporting of the USN and Boeing activities.	Resourcing
	The accelerated procurement of major materiel is possible with off-the-shelf items currently in production, but the establishment of a sustainment solution is a challenge and requires early management oversight.	Requirements Management
	Personnel resourcing, especially continuity in Business and Finance staff, requires careful management in project wind-down leading to Final Operational Capability as project reporting and accurate financial accounting remains obligatory and at the same magnitude. Australian Super Hornet Project Office suffered when the business and finance responsibilities were reassigned from the Project Office in Canberra to Tactical Fighter Systems Program Office 12 months before Final Operational Capability without an associated transfer of personnel. Furthermore, the level of work to account for assets and inventory procured by the project and the finance resource that would be required following Final Material Release was underestimated causing the processing of Assets Under Construction to be adversely affected. This was further exacerbated by increased governance required through the utilisation of Quality Assurance Rollout Assist. To overcome these deficiencies, finance and logistics resources are being shared within Tactical Fighter Systems Program Office.	**Resourcing**
Phase 2	Weapons acquired under the scope of the Project proved to be cost effective for the Commonwealth as the weapons were USN common and this also assisted in providing common integration and technical input from the USN.	First of Type Equipment; and Off-The-Shelf Equipment
	FMS is a good procurement vehicle when a US Program is truly MOTS. However, FMS provides little ability for DMO to manage capability and associated risk when the US program is less mature.	First of Type Equipment; and Off-The-Shelf Equipment

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	Phase 1 AVM Colin Thorne Phase 2 Mr Anthony Klenthis
Branch Head	Phase 1 AIRCDRE Axel Augustin Phase 2 Mr Martin Weir
Project Director	Phase 1 GPCAPT Graham Edwards **(to Dec 11)** **GPCAPT Damien Keddie (Jan 12–current)** Phase 2 Mr Peter Kiss **(to Apr 12)** **Ms Catherine Martin (Apr 12–current)**
Project Manager	Phase 1 Mr Simon Barnes **(to Dec 11)** **WGCDR Edward Saunders (Dec 11–Jun 12)** **WGCDR Alistair Third (Jun 12–current)** Phase 2 **WGCDR Jamie Scott**

Project Data Summary Sheet[236]

Project Name	**OVERLANDER VEHICLES**
Project Number	**LAND 121 Phase 3**
Capability Type	Replacement
Service	Australian Army
Government 1st Pass Approval	Jun 04
Government 2nd Pass Approval	Aug 07
Total Approved Budget (Current)	**$3,171.2**
2011-12 Budget	**$109.2m**
Project Stage	**Phase 3A: Acceptance Testing** **Phase 3B: Second Pass (Negotiations)**
Complexity	ACAT I

Section 1 – Project Summary

1.1 Project Description

LAND 121 Phase 3 will replace the current fleet of Australian Defence Force (ADF) field vehicles, modules and trailers. These vehicles will enhance the ground mobility of the ADF through the provision of Field Vehicles, Modules and Trailers (FVM&T).

In December 2011, Government approved the splitting of LAND 121 Phase 3 into two projects:

- **LAND 121 Phase 3A – Lightweight and Light Capability (LLC), incorporating the approved Ph 5A, and**
- **LAND 121 Phase 3B – Medium and Heavy Capability (MHC). For the purposes of this report, we have provided information on the approved split. However for financials LAND 121 Phase 3 is treated as a whole for 2011-12. The financial split will be in place for 2012-13 and beyond.**

The project seeks to acquire the following:

- **Phase 3A will provide 2,146** unprotected vehicles **with associated** modules **and 1,799** trailers;
- **Phase 3B will provide a range of mediumweight, medium and heavy trucks. Matched trailers will be acquired to complement the MHC vehicle fleet and provide payload carrying capacity between four and seventy tonnes. The capability will comprise an array of variants including semi trailers, recovery trucks, hook lift trucks and flatbeds, in both protected and unprotected configurations. The project will also deliver specialist modules and integrated Through Life Support for up to 2,695 vehicles.**

1.2 Current Status

Phase 3A LLC is in contract with roll-out of vehicles and trailers scheduled to commence in July 2012. A contract change proposal for the acquisition of Phase 5A vehicles and trailers was signed in January 2012.

[236] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

Phase 3B MHC was removed from the List of Project of Concern in December 2011. The project is currently in discussions with the preferred tenderers, Rheinmetall MAN Military Vehicles Australia and Haulmark Trailers (Australia).

Cost Performance

As at 30 June 2012, project LAND 121 Phase 3 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

Phase 3A LLC **– Vehicle deliveries commenced in March 2011 in accordance with the acquisition schedule - 643 vehicles have been delivered as at 30 June 2012.**

The main roll-out to Defence units is scheduled to occur during the period July 2012 to June 2015 for LAND 121 Phase 3A.

Phase 3B MHC **– The project is currently undertaking Offer Definition Activities with the preferred tenderer Rheinmetall MAN Military Vehicles Australia prior to conduct of formal contract negotiations. Haulmark are developing system specifications under a seed contract, and at the conclusion of the seed contract performance, will lodge a business case that will form the basis of negotiations. The project will return to Government for a revised second pass by mid 2013 and a contract signature is expected shortly thereafter. Milestones will be agreed as part of the Second Pass submission.**

Materiel Capability Performance

Phase 3A LLC **–** There is currently **one** issue that will affect Materiel Capability Performance.

The Project Office is awaiting additional data from Mercedes-Benz to confirm their tender claims against the air transportability requirements (external air-lift under a CH-47 Chinook helicopter and internally within the Royal Australian Air Force (RAAF) C-130 Hercules. The Lead Capability Manager is concurrently re-examining the requirement for air-drop of the vehicles.

Phase 3B MHC **–** Affordability will impact the overall capability, with costs being managed by maximising off-the-shelf solutions.

1.3 Project Context

Project	Explanation
Background	**Project LAND 121 Phase 3** Project LAND 121 Phase 3 is a multi-phased Project that will provide the ADF with the FVM&T and associated support it requires beyond the life of type of the current assets in order to meet ADF mobility requirements. Phase 3 will acquire and support a new range of Military-Off-The-Shelf (MOTS) vehicles, along with associated trailers and integrated modules to replace the ADF's current FVM&T capability. In Australia and in operational theatres FVM&T fleets are used on a day-to-day basis to perform a range of roles including logistic distribution, command and liaison, casualty evacuation, troop lift, and the provision of mobility to specialist assets such as command shelters and communications terminals. Support contracts will be established with each original equipment manufacturer (OEM) to ensure support to the FVM&T throughout their service life (support contracts have an initial term and options for extension). Support services covered by the support contracts include: Configuration Management, Engineering Support, Maintenance Support, Supply Support, and Quality Management. Phase 3 represents one of Army's largest capital programs. Although the Australian Regular Army is the principal operator and beneficiary of the capability, the Army Reserve and Royal Australian Air Force (RAAF) will also benefit from the new FVM&T. The ADF's existing FVM&T fleet consists of some 7,300 vehicles and 3,700 trailers acquired progressively from 1959. In 2008, 98% of the current assets had exceeded their life of type and are increasingly costly to maintain, repair and operate. Furthermore, heavy operational usage since 1999 has increased the challenge of sustaining an aging fleet. The new FVM&T fleet will see rationalisation of vehicle types and numbers. **In December 2011, Government approved the splitting of LAND 121 Phase 3 into**

	two projects: LAND 121 Phase 3A – Lightweight and Light Capability (incorporating the approved Ph 5A); and LAND 121 Phase 3B – Medium and Heavy Capability. **LAND 121 Phase 3A LLC – originally approved by Government in August 2007, was to acquire 1,187 Mercedes-Benz Geländerwagen or G-Wagons for the Australian Defence Force along with 973 matching trailers from Haulmark Trailers (Australia).** **In August 2011, Government approved the acquisition of an additional 959 Mercedes-Benz G-Wagons and 826 trailers to satisfy the requirements identified for LAND 121 PH 5A. In doing so Government also agreed that, subject to successful negotiations, this additional acquisition would be achieved via the extant contracts with Mercedes-Benz Australia/Pacific Pty Ltd and Haulmark Trailers (Australia) Pty Ltd.** **Having completed negotiations with both companies, the Contract Amendment for the G-Wagon acquisition was executed on 18 January 2012 and the Contract Amendment for the Trailer acquisition on 25 January 2012.** **Accordingly, LAND 121 Phase 3A will be acquiring 2,146 G-Wagons and 1,799 trailers. Along with those vehicles being acquired by LAND 121 Phase 4, these vehicles and trailers will replace the current Land Rover 4x4 and 6x6 vehicle fleets which have been in use by the Australian Defence Force since the mid-1980s.** **LAND 121 Phase 3B MHC – In December 2008, a multi-stage tender resubmission process was initiated for the MHC vehicle and module requirements after the Commonwealth withdrew from negotiations with BAE Systems. A joint statement was released by the Minister for Defence and the Minister for Defence Materiel on the 12 December 2011, advising that Defence would enter negotiations with Rheinmetall MAN Military Vehicles Australia for the vehicle and module requirements, and with Haulmark Trailers Australia for the MHC trailer requirements.**
Uniqueness	LAND 121 Phase 3 is to roll-out the FVM&T capability to multiple locations throughout Australia and on operational service overseas. This presents a unique logistic challenge in having a robust Support System that will achieve stated availability requirements for the lowest life cycle cost.
Major Challenges	**Phase 3A** LLC **– The primary challenge has been the integration of the new generation Command, Control, Communication, Computer and Intelligence (C4I) systems into production vehicles and modules.** **Phase 3B** MHC **–** Challenges during the vehicle acquisition process include**:** • **Axle Weights limits imposed by State and Territory authorities have the potential to restrict how vehicles will be operated on public roads.** • **Gross Combination Mass of three vehicle/trailer combinations exceeds the legislative limitations when fully laden.** • **Synchronisation of the two separate primes (i.e. vehicles and trailers) to deliver a complete mission system.** • **Integration of the new C4I systems into vehicles and modules.**
Other Current Projects/Sub-Projects	**LAND 121 Phase 2A** addresses capability shortfalls within the current field vehicle and trailer fleet. Phase 2A is an "umbrella project" for six separate sub-projects. This Project **is complete and was formally** closed in **June 2012**.
	LAND 121 Phase 4, currently post Interim Pass Approval, proposes to provide the ADF with a light Protected Mobility Vehicle (PMV-L) capability, that includes four vehicle types and companion trailer, which will serve as the platform for command and control, liaison, reconnaissance and utility roles.

	LAND 121 Phase 5 provides the ADF with vehicles for tactical training within the "raise, train and sustain" functions. As part of the development of Defence White Paper 2009 LAND 121 Phase 5 was split into Phase 5A (LLC segment) and Phase 5B (MHC segment). In December 2011, Government approved the splitting of LAND 121 Phase 3 into two projects: LAND 121 Phase 3A – Lightweight and Light Capability (incorporating the approved Phase 5A); and LAND 121 Phase 3B – Medium and Heavy Capability (and unapproved Phase 5B). Phase 5B is an unapproved project that seeks to acquire unprotected medium and heavy vehicles and associated modules and trailers for tactical training.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
JP126 Phase 2 Joint Theatre Distribution	The primary mission of JP 126 Phase 2 is to ensure "the synchronised delivery of equipment, materiel and personnel within joint theatres of operations, at the required time and in the required quantities and condition in order to support the joint commander's missions".	Funding provided for purchase of 141 **Integrated** Load Handling Systems, 399 Flatracks and 60 Container Roll-Out Platforms **(CROP). The Sponsor has advised that the CROP is not to be acquired as the capability will be met through Flatracks.**
JP 2059 Phase 2 Bulk Liquid Distribution	**JP 2059 is to provide a bulk fuel and water storage and distribution capability to support the concurrent deployment of:** • **A brigade-based Joint Task Force;** • **A Battalion Group deployed on independent operations including their supporting attachments; and** • **A unit-line refuelling capability for the Armed Reconnaissance Helicopter.**	**On behalf of JP 2059 Phase 2A, LAND 121 Phase 3B is acquiring the following:** • **Nine ARH refuelling systems (Heavy ILHS vehicles with Modules, Heavy, Bulk Fuel Pump and Storage);** • **30 Water Twenty Foot Equivalent Units (Modules, Heavy Bulk Water) which were allocated to JP2059 from JP126; and** • **JP2059 to provide $22.9m – transfer of funds still pending.**
LAND 116 Phase 3 BUSHRANGER	**Project BUSHRANGER will provide protected land mobility to Army combat units and RAAF Airfield Defence Guards with the Bushmaster Protected Mobility Vehicle (PMV).**	**Specific FVM&T requirements for LAND 116 Phase 3 and the Enhanced Land Force (ELF) were incorporated into the LAND 121 Phase 3 Basis of Provisioning (BOP).**

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Aug 07	Original Approved		2,745.3	
Jan 09	Real Variation – Scope	(14.8)		1
Jan 09	Real Variation – Transfer	4.5		2
			(10.3)	
Jul 10	Price Indexation		746.8	3
Jun 12	Exchange Variation		**(310.6)**	
Jun 12	**Total Budget**		**3,171.2**	**4**
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – Mercedes-Benz Australia/Pacific Pty Ltd (Acquisition)	**(59.5)**		
	Contract Expenditure – Mercedes-Benz Australia/Pacific Pty Ltd (Support)	**(1.2)**		
	Contract Expenditure – Haulmark (Aust) Pty Ltd	**(8.3)**		
	Other Contract Payments / Internal Expenses	**(35.8)**		**5**
			(104.8)	
FY to Jun 12	Contract Expenditure – Mercedes-Benz Australia/Pacific Pty Ltd (Acquisition)	**(103.6)**		
	Contract Expenditure – Mercedes-Benz Australia/Pacific Pty Ltd (Support)	**(0.8)**		
	Contract Expenditure – Haulmark (Aust) Pty Ltd (Acquisition)	**(8.4)**		
	Contract Expenditure – Haulmark (Aust) Pty Ltd (Support)	**(1.3)**		
	Other Contract Payments / Internal Expenses	**(16.5)**		**6**
			(130.6)	**7**
Jun 12	**Total Expenditure**		**(235.4)**	
Jun 12	**Remaining Budget**		**2,935.8**	

Notes	
1	Return for ELF Facilities funding incorrectly transferred to DMO.
2	From **initial** LAND 121 Phase 3A on closure.
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $313.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $433.5m having been applied to the remaining life of the project.
4	**The total project budget does not include the additional $366.0m for additional G-Wagons and Trailers approved August 2011 under LAND 121 Phase 5A. Government also agreed in December 2011 for the split of the existing LAND 121 Phase 3 into Phase 3A (LLC) and Phase 3B (MHC). These real variations to the project budget are to be reflected in CEPPlan and the LAND 121 Phase 3A and LAND 121 Phase 3B Material Acquisition Agreements and will be proposed for separate reporting in future.**
5	Other expenditure comprises: contractors and consultants **$5.9m, Embedded Service Fee $10.0m, MHC resubmission costs $2.7m and other project office costs not associated with the prime contracts $17.2m.**

6	Other expenditure comprises: **contractors and consultants $3.5m, Embedded Service Fee $5.6m and other project office costs not associated with the prime contracts $7.4m.**
7	**This total differs from the Defence Annual report which only captures FY 2011/12 expenditure against Phase 3A.**

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The project has fully achieved its financial year target, and further achieved its approved (in accordance with a Program Variation Certificate) overspend based upon a strategic opportunity to bring forward vehicles, trailers, and trailer spares that were originally planned in FY 2012–13.**
			Overseas Industry	
		2.9	Local Industry	
		18.5	Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
109.2	**130.6**	**21.4**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
Mercedes Benz Australia Pacific Pty Ltd	Oct 08	321.8	**595.0**	Variable	ASDEFCON	**1**
Mercedes Benz Australia Pacific Pty Ltd	Oct 08	45.1	45.1	Variable	ASDEFCON	**2**
Haulmark Trailers (Australia) Pty Ltd	Apr 10	42.0	**67.7**	Variable	ASDEFCON	**3**
Haulmark Trailers (Australia) Pty Ltd	Apr 10	22.2	**23.0**	Variable	ASDEFCON	**4**

Notes	
1	**Acquisition Contract - Includes additional vehicles approved under LAND 121 Phase 5A.**
2	**Support Services Contract comprising Interim Support Services and Through Life Support Services.**
3	**Acquisition Contract - Includes additional trailers approved under LAND 121 Phase 5A.**
4	**Support Services Contract comprising Interim Support Services and Through Life Support Services.**

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
Mercedes Benz Australia Pacific Pty Ltd	**1,187**	**2,146**	LLC: **Vehicles with associated modules**	**1**
Mercedes Benz Australia Pacific Pty Ltd	N/A	N/A	LLC: Support Contract for vehicles and modules	
Haulmark Trailers (Australia) Pty Ltd	979	**1,799**	LLT: Production Trailers	
Haulmark Trailers (Australia) Pty Ltd	N/A	N/A	LLT: Support Contract for Trailers	

Major equipment received and quantities to 30 Jun 12	
LLC: • **All design reviews complete.** • **Six of the eight mission system variants (exceptions being Ambulance & S&R) have exited Production Readiness Review.** • **13 prototypes delivered.** • **643 production vehicles delivered.** • **88 production trailers delivered.**	
Notes	
1	**The quantity figures being communicated publically exclude modules and prototypes. The figures presented here align to avoid confusion.**

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Preliminary Design	LLC: Trucks (Lightweight Carryall Station Wagon, Lightweight Carryall Soft Top, Lightweight Carryall Hard Top, Light Dual Cab, Light Cab Chassis, Light Surveillance and Reconnaissance)	Apr 09		Jun 09	2	
	LLC: Modules (Command Post, Mobile Dual Cab; Command Post, Cab Chassis; Cargo, Dual Cab; Cargo, Cab Chassis; Ambulance, Cab Chassis; PCRS, Cab Chassis; Canine, Dual Cab)	Mar 09		Mar 09	0	
	LLC: Light & Lightweight Trailers	Oct 10		Oct 10	0	
Critical Design	LLC: Trucks (Lightweight Carryall Station Wagon, Lightweight Carryall Soft Top, Light Dual Cab, Light Cab Chassis and Carryall Hard Top)	Aug 09		Sep 09	1	1
	LLC: Truck, Light, Surveillance and Reconnaissance vehicle only	Jun 10		Jun 10	0	
	LLC: Modules (Command Post, Mobile Dual Cab)	Sep 09		Dec 10	15	1
	LLC: Modules (Cargo Cab Chassis, Canine Dual Cab)	Sep 09		Dec 09	3	1
	LLC: Module (Light Ambulance, Cab Chassis)	Jul 10		Oct 11	15	1
	LLC: Module (Light PCRS Cab Chassis)	Jul 10		Jul 11	12	1, **2**
	LLC: Tray (Light Surveillance and Reconnaissance)	Jun 10		Aug 11	14	1
	LLC: Light & Lightweight Trailers	Mar 11		Mar 11	0	

Notes	
1	LLC Critical Design Review with a variance between the originally planned and achieved date is due to a change in specification by the Commonwealth.
2	**All work on PCRS Module ceased post CDR following advice from CDG that removed the requirement for a PCRS Module. CDG recommended the acquisition of 15 additional Modules (Light Cargo) in lieu of the PCRS module. AHQ and AFHQ concurred with this change.**

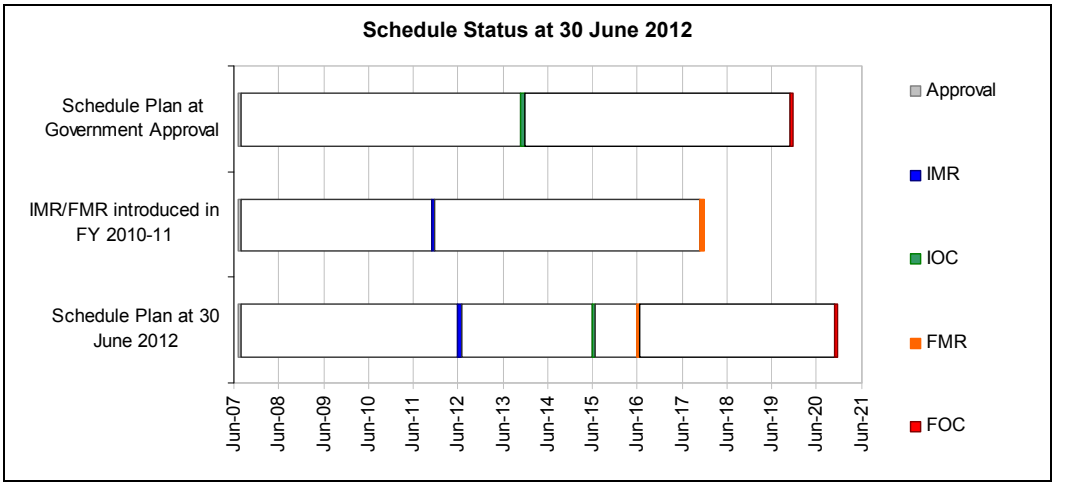
3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Test Readiness Review	LLC: Trucks (Lightweight Carryall Station Wagon, Lightweight Carryall Soft Top, Light Dual Cab, Light Cab Chassis)	Oct 09		Dec 09	2	1
	LLC: Truck, Light, Surveillance and Reconnaissance vehicle only	Aug 10		Dec 11	16	1
	LLC: Truck, Lightweight, Carryall Hard Top	Oct 09		Oct 10	12	1
	LLC: Modules (Cargo Cab Chassis, Canine Dual Cab)	Jan 10		May 10	4	1
	LLC: Module (Light Ambulance, Cab Chassis)	Oct 10	Jan 12	**Feb 12**	**16**	**2**
	LLC: Modules (Command Post, Mobile Dual Cab)	Jan 10	May 11	May 11	16	1
	LLC: Tray (Light Surveillance and Reconnaissance)	Aug 10	Dec 11	Dec 11	16	1
	LLC: Light & Lightweight Trailers	Jul 11		Jul 11	0	
Functional Configuration Audit	LLC: Trucks (Lightweight Carryall Station Wagon, Lightweight Carryall Soft Top, Light Dual Cab, Light Cab Chassis)	Aug 10		Aug 10	0	
	LLC: Truck, Light, Surveillance and Reconnaissance vehicle only	Feb 11		Nov 10	(3)	1
	LLC: Truck, Lightweight, Carryall Hard Top	Aug 10		Oct 10	2	1
	LLC: Modules (Cargo Cab Chassis, Canine Dual Cab)	Jun 10		Nov 10	5	1
	LLC: Module (Light Ambulance, Cab Chassis)	Apr 11	**Aug 12**	**Aug 12**	**16**	1
	LLC: Modules (Command Post, Mobile Dual Cab)	Aug 10	Oct 11	Oct 11	14	1
	LLC: Tray (Light Surveillance and Reconnaissance)	Feb 11	**Sep 12**	**Nov 12**	**21**	1
Acceptance Verification and Validation	LLC: Light & Lightweight Trailers	Jul-Oct 11		**Jul-Nov 11**	**1**	**3**

Notes	
1	LLC Reviews with a variance between the originally planned and achieved/forecast dates is due to changes in specification by the Commonwealth.
2	**Delayed from originally planned first week of January 2012 to February 2012 due to Contractor availability over Christmas stand-down and conduct of Surveillance and Reconnaissance User Trial in mid to late January 2012.**
3	**November 2011 planned as contingency and was used for retesting.**

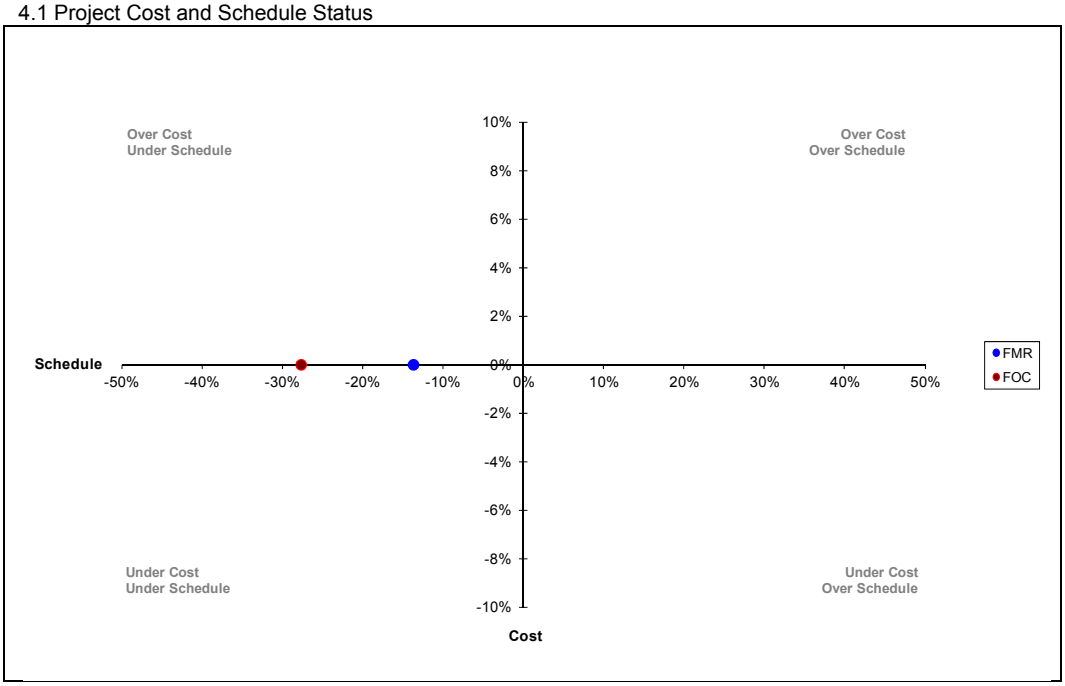
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Phase 3A LLC				
Initial Materiel Release (IMR)	**Dec 11**	**Jul 12**	**6**	**IMR report being finalised between DMO and the Capability Manager at this time. Roll-out to RAAF units in south-east Queensland commenced in November 2011; main roll-out to Army and other RAAF units commenced in July 2012.**
Initial Operational Capability (IOC)	**Dec 13**	**Mid 15**	**18**	**Milestone adjusted as a result of Government decision to split LAND 121 Phase 3 into Phase 3A (LLC) and Phase 3B (MHC).**
Final Materiel Release (FMR)	**Dec 17**	**May- Jul 16**	**(18)**	**Milestone adjusted as a result of Government decision to split LAND 121 Phase 3 into Phase 3A (LLC) and Phase 3B (MHC).**
Final Operational Capability (FOC)	**Dec 19**	**Mid 16**	**(30)**	**Milestone adjusted as a result of Government decision to split LAND 121 Phase 3 into Phase 3A (LLC) and Phase 3B (MHC).**
Phase 3B MHC				
Initial Materiel Release (IMR)	**Dec 11**	**TBC**	**TBC**	**Subject to outcomes of contract negotiations and to be confirmed at revised Second Pass.**
Initial Operational Capability (IOC)	**Dec 13**	**2017**	**up to 48**	**Subject to outcomes of contract negotiations and to be confirmed at revised Second Pass.**
Final Materiel Release (FMR)	**Dec 17**	**TBC**	**TBC**	**Subject to outcomes of contract negotiations and to be confirmed at revised Second Pass.**
Final Operational Capability (FOC)	**Dec 19**	**2020**	**up to 12**	**Subject to outcomes of contract negotiations and to be confirmed at revised Second Pass.**



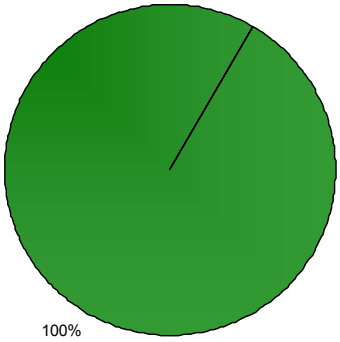
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	Green: The Project is currently meeting capability requirements as expressed in the MAA and in accordance with the requirements of the relevant Technical Regulatory Authorities.
	Amber: N/A
	Red: N/A

Note: The Measures of Materiel Capability Performance in this pie chart only represent **Phase 3A LLC**. At 30 June 2012 **Phase 3B MHC** is not in contract.

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
A number of factors have the potential to impact on the LLC **vehicle** cost, schedule and capability requirements. These includes: • Introduction into service (IIS) costs may increase; • Supply of parts for new designs during and immediately after IIS; • Maturity of platforms design and outcomes from testing and evaluation; • Compliance with regulatory requirements; • Delivery of equipment according with specifications; • Introduction into service; • Availability of required platforms and personnel for training; and • Integration of new capabilities.	The LLC project team continue to work with the relevant stakeholders to initiate methods to minimise the effect and costs of these risks. These methods include: • Minimising logistic transactions; • Constant interface with Army and Joint Logistic Units; • Constant interface with the Prime Contractor; • Involvement of subject matter experts; and • Continual review of risks and issues.

A number of factors have the potential to impact on the LLC trailer cost, schedule and capability requirements. These includes: • Introduction into service (IIS) costs may increase; • Trailer may not meet air drop capability (noting that the Capability Manager is currently reviewing the requirement for air drop); and • Interactive Electronic Technical Publications (IETP) won't be delivered as policy and guidance is yet to be developed by Defence.	The project is monitoring risk **environments and performing ongoing liaison with all stakeholders to reduce risk likelihood, and in the event that risks do occur, that the impact is minimised and manageable**.
A number of factors have the potential to impact on the MHC cost, schedule and capability requirements. These factors include: • Integration of the command, control, communication, computer and intelligence (C4I) suite to vehicles and modules; • A potential introduction into service (IIS) cost increase; • Compliance with regulatory requirements; • Availability of required platforms and personnel for training; and • The potential for specification changes to arise from contract negotiations and the design development process.	Remediation will be achieved primarily through negotiation with **Rheinmetall MAN Military Vehicles Australia**, where: • Minimal changes to the MOTS platform and the basis of provisioning and individual vehicle capability will be refined to fit within the project budget; • The vehicle prime will be the prime system integrator for the C4I fit; • IIS issues will be fully explored and quantified during negotiations; • The degree of compliance and cost of compliance with regulatory requirements will be established; • The MHC project team is working with CDG and Army to identify and quantify the training personnel that will be made available, with the final requirements to be determined by the basis of provisioning acquired; and • A combined project management stakeholder group is in operation to specifically address cross-project C4I issues. **This risk is to be transferred to Phase 3B.**

Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
N/A	N/A

6.2 Major Project Issues

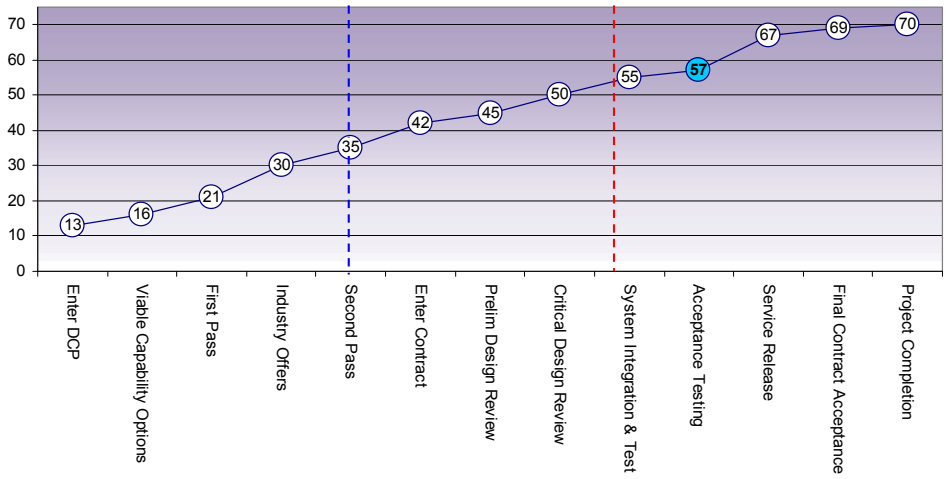
Description	Remedial Action
Phase 3B MHC: IOC has been affected by the MHC resubmission activity, leading to an impact on schedule.	The remedial action is to hasten evaluation and negotiation activities, to reduce the impact on schedule. **This issue has been retired.**
Phase 3B MHC: Army's Basis of Provisioning is unaffordable.	The remedial action is to seek Military off the Shelf platforms and limit modification to critical ADF requirements and those necessary for legislative compliance. **This issue has been retired.**

Phase 3B MHC: The capability has been affected by vehicles exceeding the axle weight limits imposed by State authorities with the consequence that the vehicles will be restricted or prohibited from driving on public roads.	**Engage State and Territory authorities through Strategic Logistic Branch (Joint Logistic Command) on acceptable exemptions for limited use of military vehicles.** **Obtain exemptions through Defence Road Transport Exemption Framework.** **Reduce load capacity of vehicles on public roads.** **Seek permits from local authorities.** **This issue is to be transferred to Phase 3B.**
Phase 3B MHC: The Gross Combination Mass of three vehicle/trailer combinations exceed the legislative limitations when carrying load.	**Engage State and Territory authorities through Strategic Logistic Branch (Joint Logistic Command) on acceptable exemptions for limited use of military vehicles.** **Load share between vehicle and trailers.** **This issue is to be transferred to Phase 3B.**

Section 7 – Project Maturity

7.1 Phase 3A Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	**Benchmark**	**8**	**8**	**8**	**8**	**9**	**8**	**8**	**57**
Acceptance Testing	**Project Status**	**8**	**7**	**7**	**8**	**8**	**8**	**8**	**54**
	Explanation	• **Cost: Cost is tracking within Project Contingency. There are still some risks which are being managed.** • **Requirements: Several Modules are still in the Design Phase and have not been accepted in production.** • **Technical Difficulty: Several Modules are still in the Design Phase and have not been accepted in production.**							



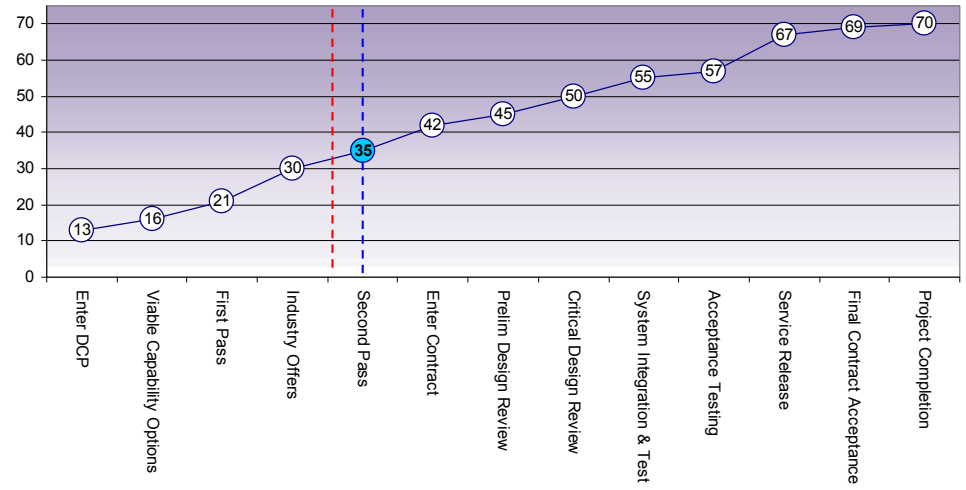
2010-11 DMO MPR Status - - - -	2011-12 DMO MPR Status - - - -

Notes

The 2010-11 maturity score reflects the overall maturity of LAND 121 Phase 3 prior to being divided in to Phases 3A and 3B.

7.2 Phase 3B Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	5	5	5	5	5	5	5	35
Second Pass	Project Status	**4**	**5**	**5**	**5**	**5**	**5**	**4**	**33**
	Explanation	**The maturity scores will be refined at the conclusion of the negotiated outcomes. The current score reflects the immature status of LAND 121 Phase 3B.**							



2010-11 DMO MPR Status - - - -	2011-12 DMO MPR Status - - - -

Notes
The 2010-11 maturity score reflects the overall maturity of LAND 121 Phase 3 prior to being divided in to Phases 3A and 3B.

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
To avoid costly and time consuming Contract Change Proposals (CCP), due to requirement variations, it is critical that Defence stakeholders provide clarity in terms of the OCD and FPS.	Requirements Management
The time required to negotiate contracts for the **LAND 121** project is a significant driver of the schedule.	Contract Management Requirements Management
When the organisation is under pressure to compress schedule so as to hasten the delivery of capability to the war-fighter, key decisions must be taken in light of potential impact on the ability of the project to achieve this aim.	Schedule Management Resourcing
It is important to ensure the early involvement of ALTC staff in the development of the Training requirement. This includes reviewing the ASDEFCON template DID ILS-910 and relevant clauses pertaining to training and participation in preliminary meetings to the Initial Training Conference. Suggest preliminary brief by ALTC for them to define their expectations, and 'fit' to contractual requirements.	Resourcing
The effort involved with the vehicle / trailer interface (and any other interface with the prime equipment - eg wheels, required payload, etc) should not be underestimated even for apparently simple equipments. The early formation of interface working groups is important.	Requirements Management
No matter how attractive it is to rush equipment into service or no matter how strong the desire/pressure is to shorten the project schedule, proper and fulsome verification and validation of manufacturer's claims must be undertaken prior to giving approval for	Requirements Management

production. This is particularly relevant now as equipment/vehicles become more complex with more electronic components being installed such as on-board computers, electronic control units, on-board diagnostic equipment, etc.	

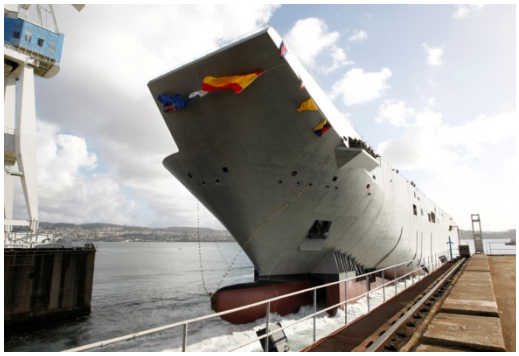
Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	MAJGEN Grant Cavenagh
Branch Head	BRIG Gregory Downing
Project Director (MHC)	Mr Drew McMeekin
Project Director (LLC)	Mr Ken Butler

Project Data Summary Sheet[237]

Project Name	**AMPHIBIOUS SHIPS (LHD)**
Project Number	**JP 2048 Phase 4A/4B**
Capability Type	New Capability
Service	Joint Services
Government 1st Pass Approval	Aug 05
Government 2nd Pass Approval	Jun 07
Total Approved Budget (Current)	**$3,052.1m**
2011-12 Budget	**$622.7m**
Project Stage	Critical Design Review
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

The JP2048 Phase 4A/B project will provide the Australian Defence Force (ADF) with an increased amphibious deployment and sustainment capability through the acquisition of two Landing Helicopter Docks (LHDs) and associated supplies and support.

Together, these 27,000 tonne LHDs will be able to land a force of over 2,000 personnel by helicopter and watercraft, along with all their weapons, ammunition, vehicles and stores.

1.2 Current Status

Cost Performance

As at 30 June 2012, project JP 2048 Phase 4A/4B has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

The project remains within its current approved budget.

Schedule Performance

The project remains on track for delivering the two LHDs by planned dates of 2014 and 2015.

Major project milestones achieved **in 2011-12** include:

- **Training Development Contract Change Proposal;**
- **Commencement of LHD01 Superstructure Pre-Outfit; and**
- **Cut Steel for LHD02 Superstructure**.

Progress of these milestones demonstrates schedule performance and supports the achievement of project outcomes within the planned timeframes.

[237] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

Materiel Capability Performance

The amphibious capability sought through the provision of two LHDs is as follows:

- Carriage, in addition to the crew, of approximately 1,200 personnel in the force ashore with a further 800 personnel providing helicopter operations, logistics, command and intelligence as well as other supporting units;
- Space and deck strength sufficient to carry around 100 armoured vehicles, including tanks, and 200 other vehicles (approximately 2400 lane metres);
- Hangar space for at least 12 helicopters and an equal number of landing spots to allow a company group to be simultaneously landed;
- 45 days endurance for crew and embarked force including sustainment, medical, rotary wing and operational maintenance and repair support to these forces whilst ashore for 10 days;
- Command and control of the land, sea and air elements of a Joint Task Force; and
- The ability to conduct simultaneous helicopter and watercraft operations in conditions up to Sea State 4.

The project is on track for delivering these capabilities.

1.3 Project Context

Project	Explanation
Background	The Defence Capability Plan 2004-14 identified a requirement to replace the Heavy Landing Ship HMAS *Tobruk* (JP 2048 Phase 4A) and one Amphibious Landing Ship, either HMAS *Manoora* or *Kanimbla* (JP 2048 Phase 4B). In the Defence Capability Plan 2006-16, Phases 4A and 4B of JP 2048 were amalgamated. A Request For Information was undertaken to gather vessel capability and industry capacity information from international and Australian ship designers and shipbuilders. A Risk Reduction and Design Study and a preliminary Request for Quotation were also undertaken to provide commercial, technical, financial and schedule information for First Pass. First Pass approval was obtained in August 2005 with the identification of two existing LHD designs that could meet the capability requirements (Armaris' Mistral and Navantia's **LHD 'Juan Carlos'**) and the identification of potential Australian shipbuilders. After First Pass, a 'Design Development Activity' was conducted at the designers' respective premises to clarify the necessary Australian environmental and technical requirements, resulting in 'Australianised' designs. During this process, two shipbuilder/designer teams were formed with Tenix Defence working with Navantia and Thales Australia with Armaris. A Request for Tender was released in April 2006 to the shipbuilders for the construction of the 'Australianised' designs. Both builders submitted compliant tenders which were evaluated, and second Pass approval for the Tenix-Navantia solution was obtained in June 2007. A contract was signed in October 2007 between the Commonwealth and Tenix Defence (now BAE Systems Australia Defence), for the acquisition of the two Spanish designed *Canberra* Class LHD ships and support systems; the contract came into effect in November 2007.
Uniqueness	While the LHDs are based on an existing Spanish BPE design, the "Australianisation" changes, the incorporation of an existing SAAB Combat System, and the development and integration of the internal and external communication systems will result in a unique vessel. Despite the experience gained in amphibious operations with the current amphibious ships in the Royal Australian Navy (RAN), the LHDs will bring a new and unique capability to the ADF by virtue of their size, aviation, well dock, and communications capabilities. A unique build strategy is being employed. The LHD hulls will be built, including the majority of the fit-out, by Navantia at the Ferrol and Fene Shipyards in Spain. They will be transported to Australia as individual lifts on a 'float on/float off' heavy lift ship. Construction of the superstructure and its consolidation with the hull will be conducted

	by BAE Systems Australia Defence at their Williamstown (Victoria) Shipyard in Australia. The superstructure contains the high level Combat and Communications Systems equipment that will need to be maintained and upgraded in Australia. BAE Systems Australia Defence will also undertake the final out-fit, set-to-work, and trials.
Major Challenges	The project has completed Preliminary Design and Detailed Design Reviews. To date the project has not experienced any major issues that will affect the delivery dates of the LHDs. However, it has experienced a number of minor issues concerning the design and integration. Workforce capacity remains an essential enabler for timely project completion. Control of commercially sensitive Intellectual Property remains an on-going management issue for all parties. While the LHD ships are based on the existing Spanish BPE design, the Australian combat and communication capability requires design and integration work to be undertaken. The task of integration of the Australian elements, such as the combat system and internal/external communications systems, has proved to be more complex than initially thought. Additional time has been required to address integration issues and **has resulted in some minor movement of combat and communication system integration milestones. This has not impacted the major milestone of ship delivery.** One of the additional challenges for this project remains the potential for regulatory changes and/or requirements creep on the capability requirements. The project has a fixed budget for the approved requirements, and any changes to regulations that require a change to the vessel or requested capability changes are likely to impact on the project's performance, cost, and schedule outcomes.
Other Current Projects/Sub-Projects	**JP 2048 Phase 3:** Watercraft system acquisition to be used in conjunction with the Phase 4A/4B LHD Mission System. These watercraft will be the ship to shore connector for the LHDs. **JP 2048 Phase 4C:** Phase 4C acquisition of a strategic sealift capability. **JP 2048 Phase 5:** Landing Craft Heavy Replacement capable of small scale independent operations and augmenting larger amphibious and sealift ships.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1442 Maritime Communications Modernisation	The project was established to modernise and integrate the communications infrastructure in the RAN Fleet, and establish the framework for the future modernisation of additional elements of the fleet such as the LHD.	The LHDs will have network capability compatible with the Maritime Tactical Wide Area Network of SEA 1442.
JP 2089 Phase 2 Tactical Information Exchange Domain (Data Links)	The project is intended to deliver tactical data links to legacy platforms and capabilities of the ADF and the infrastructure required to support tactical data exchange at the force level.	The LHDs will be delivered with Link 16, Link 11 and Variable Message Format systems for tactical data exchange that will be compatible with other ADF systems.
JP 2008 **Phase 5B** Military Satellite Communications	**This** multi-phased project has been established to provide the ADF with a range of strategic and tactical satellite communications (SATCOM) capabilities.	Each LHD will include one Maritime Advanced SATCOM Terrestrial Infrastructure System satellite terminal and capability to install a second terminal at a later date if necessary.
JP 5408 GPS Enhancement Project	JP 5408 GPS Enhancement Project is intended to enhance	The GPS Enhancement System **will provide** protection and/or

	GPS user equipment on ADF legacy platforms.	redundancy capability of sufficient quality and robustness to meet mission critical navigation and timing tasks for ADF systems, including the LHD ships.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Nov 03	Original Approved		3.1	1
Sep 04	Real Variation – Scope	4.8		2
Nov 05	Real Variation – Scope	29.6		3
Jun 07	Government Second Pass Approval	2,920.8		
Oct 08	Real Variation – Transfer	9.3		4
			2,967.6	
Jul 10	Price Indexation		428.4	5
Jun 12	Exchange Variation		**(343.9)**	
Jun 12	**Total Budget**		**3,052.1**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – BAE Systems	**(1,498.6)**		
	Other Contract Payments / Internal Expenses	**(70.3)**		6
			(1,568.9)	
FY to Jun 12	Contract Expenditure – BAE Systems	**(606.3)**		
	Other Contract Payments / Internal Expenses	**(9.9)**		
			(616.2)	
Jun 12	**Total Expenditure**		**(2,185.1)**	
Jun 12	**Remaining Budget**		**867.0**	

Notes	
1	This project's original DMO budget amount is that prior to achieving Second Pass Government approval.
2	To fund a risk reduction activity for the Project to obtain design data and develop designs to meet Australian essential requirements.
3	First Pass approval.
4	Transfer of funding for technical studies from Defence Science and Technology Organisation.
5	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $350m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $78.4m having been applied to the remaining life of the project.
6	Other expenditure comprises: Operating Expenditure, Offer Definition, Consultants, Foreign Military Sales, Contractor Support and Minor Capital expenditure not attributable to the Prime contract.

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The year to date variance is attributed to minor Prime Contract milestones movements between June and July 2012. The project has also experienced a FOREX gain of $0.9m.**
		(5.6)	Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
		(0.9)	FOREX Variation	
			Commonwealth Delays	
622.7	**616.2**	**(6.5)**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
BAE Systems	Oct 07	2,268.1	**2,405.6**	Variable	ASDEFCON	1

Notes	
1	Contract Price at Revision **60.**

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
BAE Systems	2	2	LHD ships and integrated support systems.	

Major equipment received and quantities to 30 Jun 12
Detailed Design Review achieved. Construction of hull **and superstructure** sections **for both LHDs** underway.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Mission System (Includes Platform / Combat Systems)	Feb 08	Feb 08	Feb 08	0	
	Support System	Apr 08	Apr 08	Apr 08	0	
Preliminary Design	Communication	Oct 08	Oct 08	Dec 08	2	1
	Navigation	Oct 08	Oct 08	Dec 08	2	1
	Platform System	Nov 08	Nov 08	Nov 08	0	
	Combat System	Dec 08	Apr 09	Apr 09	4	1
	Whole of Ship	Jan 09	May 09	May 09	4	1
	Support system	Mar 09	May 09	May 09	2	1
Detailed Design	Communication	May 09	Sep 09	Sep 09	4	1
	Navigation	Jun 09	Jun 09	Jun 09	0	
	Platform system	Jun 09	Jun 09	Jun 09	0	
	Combat system	Jul 09	Oct 09	Oct 09	3	1
	Whole of ship	Jul 09	Dec 09	Dec 09	5	1
	Support system	Aug 09	Dec 09	Dec 09	4	1

Notes	
1	Due to the complexity of the design and integration of the combat, communications and platform systems, more time has been allocated to the design review activities. LHD1 was launched from

	the slipway in Spain in February 2011 and the Grand Block#01 erected for LHD2 the following day. Superstructure production commenced in Melbourne in November 2010. **Production activities on both LHD01 and 02 in Spain and Melbourne continue. The Heavy Lift Ship Company Dockwise, have closed the lift window of LHD 01 in Spain to 1-15 August 2012 in accordance with its contract with Navantia. This will see the hull arrive in Australia in September/October 2012 (40-50 day voyage) but it is not expected to impact final delivery dates. LHD02 is scheduled to launch in Ferrol, Spain on 04 July 2012.**

3.2 Test and Evaluation Progress

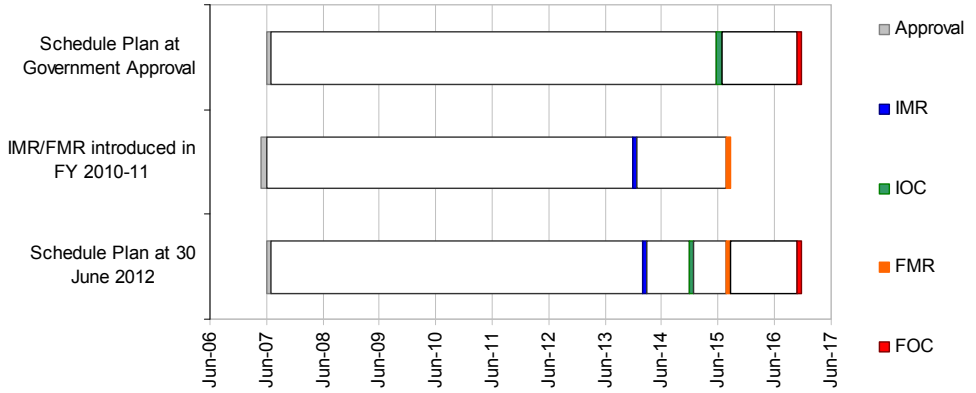
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	LHD Ships 1 and 2	Mar 15	Mar 15	Mar 15	0	
Acceptance	LHD Ship 1 Project Acceptance	Jan 14	Jan 14	Feb 14	1	1
	LHD Ship 2 Project Acceptance	Aug 15	Aug 15	Aug 15	0	
	LHD Final Acceptance	Sep 15	Sep 15	Sep 15	0	

Notes	
1	Due to latest revised dates for heavy lift ship as advised by Navantia.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

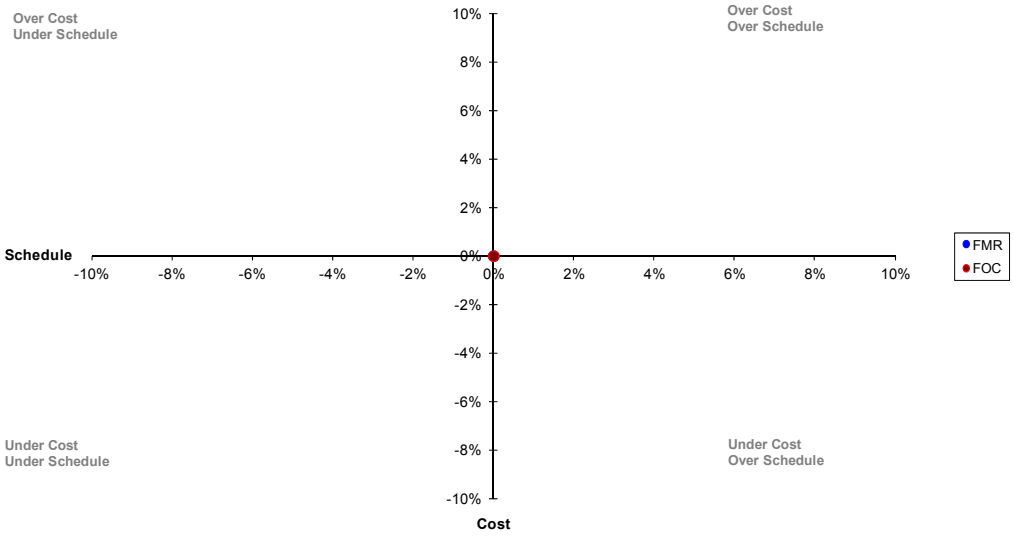
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation /Implications
Initial Materiel Release (IMR) (LHD 1)	Jan 14	Feb 14	1	Revised forecast date based on an approved contract change.
Initial Operational Capability (IOC) (LHD 1)	Jun 15	Dec 14	(6)	As per approved MAA.
Final Materiel Release (FMR) (LHD 2)	Aug 15	Aug 15	0	N/A
Final Operational Capability (FOC) (LHD 2)	Nov 16	Nov 16	0	As per approved MAA.

Schedule Status at 30 June 2012



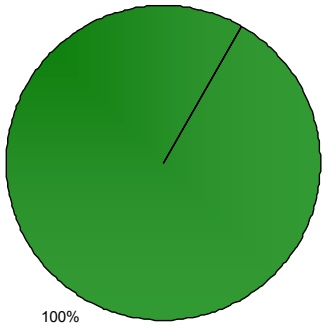
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	**Green:** **Design, production, set to work and test activities continue to support achievement of project capability outcomes. Minor technical performance issues are being addressed and stakeholders are being engaged.**
	Amber: N/A
	Red: N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Legislative / Regulatory Changes may affect Contract Requirements and impact on the delivery of the two LHDs.	• **Raise Contract Change Proposals.** • **Seek Real Cost Increases to Project Funding where affected by Legislative change.** • **Seek waivers as necessary.**
The delivery of the two LHDs will be affected by scope creep caused by contemporary understanding of requirements.	• **Seek schedule and cost relief for changes affected by Stakeholder expectations or changes in related Defence projects.** • **Program change in the Capability Insertion Program (funding source outside JP2048 PH4A & B).**
Functionality of the Combat System: there is a chance that the delivery of the LHDs may be affected by the ability of the combat system to meet performance requirements.	• Undertake a functional analysis of the system to identify potential deficiencies. • Conduct a rigorous evaluation of the technical solutions at Design Reviews. • Monitor Performance closely and address any changes to equipment or performance through the Project Management Steering Group. • Update Mission System Specification (MSS) with acceptable performance characteristics. **Following a strategic risk review this risk has been rolled up into another risk which is assessed as moderate.**
Damage to Electric Propulsion Pods: there is a chance that the delivery of the two LHDs may be affected by damage to the electric propulsion pods during installation and sea trials. This risk has been reassessed by the project and is now rated as a moderate risk.	• Assess the likelihood of damage to the pods during construction, set-to-work and initial operation; and assess the impact it may have on the schedule due to the availability of spares. • Develop a business case for the procurement of necessary spares, for consideration by the Project Management Steering Group. **This risk has been retired.**
Insufficient Funds for Integrated Logistics Support Training and Spares Procurement: there is a chance that the delivery of two LHDs may be affected by the cost of training and spares to support the LHD exceeding the allocated budget.	• Refine the Support System Specification to ensure that it adequately specifies the support levels to be achieved. • Carefully scrutinise the Logistic Support Analysis that generates the training and spares recommendations to ensure that it cost effectively meets the specification. • Monitor the development of spares and training Contract Change Proposals closely. • Define requirements carefully as both necessary and sufficient, needs vs wants. • Maximise the use of existing Original Equipment Manufacturer (OEM) and ADF training. • Manage Stakeholder expectations. **This risk has been reassessed as moderate.**

Functionality of the Communication System: there is a chance that the delivery of the LHDs may be affected by the ability of the communication systems to meet performance requirements.	• Undertake a functional analysis of the system to identify potential deficiencies. • Conduct a rigorous evaluation of the technical solutions at Design Reviews. • Monitor Performance closely and address any changes to equipment or performance through the Project Management Steering Group. **Following a strategic risk review this risk has been rolled up into another risk which is assessed as moderate.**
Unsuitable air space management system design: there is a chance that the delivery of the two LHDs will be affected by the air space management system not meeting the contracted requirements and not being able to be certified leading to performance impacts.	• Install additional radar to complement the Identification, Friend or Foe (IFF) system at short range. • Establish effectiveness of system through workshops with operator community. • Pursue early determination of Director General Technical Airworthiness' (DGTAs) certification decision. **Following a strategic risk review this risk has been rolled up into another risk which is assessed as moderate.**
The delivery to Australia of the two LHDs will be affected by loss, damage or delay to the ship.	• **Provide Navy escort to Heavy Lift Ship in areas of high piracy risk.** • **Ensure BAE arrange for tugs to tow ships to Australia should Heavy Lift Ship not be available.** • **Ensure BAE review options to consolidate Superstructure and Hull in Spain as opposed to in Australia.**
Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
The delivery of the two LHDs may be affected by the lack of resources to procure the necessary spares to support the LHDs.	• **Review the Recommended Provisioning List (RPL) to identify those items that can be procured more effectively and economically outside the LHD contract, in addition to critically examining the procurement justification.** • **Reallocate Project Resources.**
Contracted indices escalation exceeds the specialist military supplementation provision.	• **Real cost increase.** • **Reduce contracted scope.**
The contractor is unable to deliver supplies in accordance with the deliverable schedule.	• **Conduct capability schedule trade-off.** • **Seek schedule relief.**

6.2 Major Project Issues

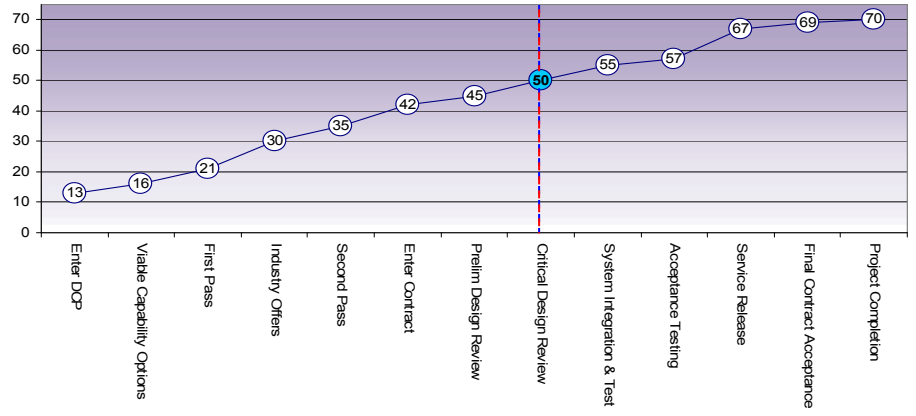
Description	Remedial Action
Intellectual Property management between BAE and Navantia.	An Intellectual Property Deed was signed by Tenix, BAE Systems, Navantia, and the Commonwealth detailing how Intellectual Property will be managed for the LHD Project. The management of Intellectual Property will be monitored through Intellectual Property audits.
Integration complexity.	Due to the complexity of the integration of the combat, communications and platform systems, more time has been allocated to the design

	activities. Additional time has also been allocated for the design review activities with the establishment of technical forums to carefully review and assess design issues prior to the conduct of the formal review.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	7	7	7	8	7	7	7	50
Critical Design Review	Project Status	8	7	7	7	7	8	6	50
	Explanation	• **Schedule:** critical path activities are well advanced and detailed planning for remaining activities is sound. Variance trends provide confidence that schedule will be within the tolerance of the Materiel Acquisition Agreement. • **Technical Understanding:** Needs are understood. Arrangements to operate and support the capability are being arranged. • **Commercial:** Contractor is performing and delivering as contracted. • **Operations and Support:** Procurement of training and spares yet to be contracted.							



2010-11 DMO MPR Status - - - -	2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
N/A	N/A

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Mr **Andrew Cawley**
Program Manager	Mr Phill Brown **(to Aug 11)** **CAPT (RAN) Craig Bourke (Aug 11–May 12)** **Mr Patrick Fitzpatrick (May 12–current)**
Project Manager	CAPT (RAN) Craig Bourke

Project Data Summary Sheet[238]

Project Name	**Future Naval Aviation Combat System**
Project Number	**AIR 9000 Phase 8**
Capability Type	Replacement
Service	Royal Australian Navy
Government 1st Pass Approval	Feb 10
Government 2nd Pass Approval	Jun 11
Total Approved Budget (Current)	$2,910.2m
2011-12 Budget	$175.4m
Project Stage	Preliminary Design Review
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

AIR 9000 Phase 8 will acquire 24 MH-60R Seahawk naval combat helicopters, associated weapons and support systems to replace the current S-70B-2 Seahawk helicopters and the cancelled SH-2G(A) Seasprite helicopters. The aircraft will be equipped with a highly sophisticated avionics suite designed to employ Hellfire air-to-surface missiles and Mark 54 anti-submarine torpedoes. The aircraft will provide Navy with a contemporary helicopter with anti-submarine warfare (ASW) and anti-surface warfare (ASuW) capability.

The acquisition of 24 aircraft will enable the Navy to deploy at least eight Seahawk Romeo flights across the ANZAC class frigates and the new Hobart class Air Warfare Destroyers (AWD).

1.2 Current Status

Cost Performance

As at 30 June 2012, project AIR 9000 Phase 8 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

A funds disbursement tracking tool for the Foreign Military Sales (FMS) case is currently under joint development by the DMO and United States (US) Navy and will add further fidelity to FMS expenditure forecasts.

[238] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

Schedule Performance Defence successfully achieved Government second Pass approval in June 2011. Acquisition FMS case Letter of Offer and Acceptance (AT-P-SCF) was signed with the US Government on schedule in June 2011. The next major milestone will be the In-Service Date (ISD), defined as two aircraft in US Navy configuration accepted, by June 2014.
Materiel Capability Performance The MH-60R 'Seahawk Romeo' helicopter being procured is a Military Off the Shelf (MOTS) procurement of a US Navy specification MH-60R Seahawk Romeo. The only modification to the standard US Navy design at acquisition is the application of Australian identification markings in lieu of US Navy markings in the paint scheme and the addition of tamper proofing to four US sensitive avionic boxes per aircraft (this will not affect functionality). The MH-60R Seahawk Romeo has been in service with the US Navy since 2005 and was first deployed operationally by the US Navy in early-2010. The US Navy has accepted 125 MH-60R and flown in excess of 93,000 flight hours as at April 2012. The ADF has yet to take delivery of any aircraft, however, there are currently no impediments to the Project achieving the materiel capability performance requirements. The revised aircraft delivery schedule will result in ADF MH-60R being delivered early.

1.3 Project Context

Project	Explanation
Background	The Defence White Paper 2009 states that 'As a matter of urgency, the Government will acquire a fleet of at least 24 new naval combat helicopters to provide eight or more aircraft concurrently embarked on ships at sea. These new aircraft will possess advanced ASW capabilities, including sonar systems able to be lowered into the sea and air-launched torpedoes, as well as an ability to fire air-to-surface missiles.'
Uniqueness	The selection of the MH-60R followed a competitive solicitation process between a US Government FMS case offering the Sikorsky / Lockheed Martin MH-60R Seahawk Romeo and a direct commercial sale from Australian Aerospace offering the NATO Helicopter Industries (NHI) NH90 NATO Frigate Helicopter (NFH). The Australian MH-60R is being acquired as a true MOTS product, in the same baseline configuration as the US Navy aircraft. A limited number of Australia unique design modifications will not be incorporated until after all aircraft have been delivered. The MH-60R is being acquired as a maritime combat capability. It will have limitations in utility roles such as passenger or cargo transfer.
Major Challenges	Developing the required facilities to house and support the MH-60R capability and associated training systems has emerged as the most significant challenge to achieving the MH-60R initial operational capability milestone. The primary issue with the facilities is significant schedule slippage internal to the Defence Support Group (DSG) due to staffing and work pressures, resulting in a 12 month delay to the facilities development program foreshadowed at second pass.
Other Current Projects/Sub-Projects	Unapproved Project AIR 9000 Phase 7 Helicopter Aircrew Training System (HATS). HATS will be an important link in the training continuum for inductees to the MH-60R training system.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1448 Phase 2B – ANZAC Anti Ship Missile Defence (ASMD)	The ASMD upgrades will provide the ANZAC frigates with an enhanced level of self defence against modern anti-ship missiles.	The AIR 9000 Phase 8 project will not achieve FOC until all ANZAC class frigates are modified for interoperability with MH-60R. ANZAC modification cannot occur until after each updated ship is accepted into naval service and a suitable maintenance period for the modifications becomes available.
SEA 4000 PH3 – Air Warfare Destroyer Build	The SEA 4000 Phase 3 Air Warfare Destroyer Project will acquire three Hobart Class Air Warfare capable Destroyers and their support system for the ADF. The capability provided by the AWDs will form a critical element of the ADF's joint air warfare defence capability and will contribute to a number of other joint warfare outcomes.	The AIR 9000 Phase 8 project will not achieve FOC until all Hobart class AWD are modified for interoperability with MH-60R. AWD modification cannot occur until after each ship is accepted into naval service and a suitable maintenance period for the modifications becomes available.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Aug 09	Original Approved		0.3	1
Jun 10	Real Variation – Budgetary Adjustments – Government First Pass Approval	9.6		
Jun 11	Government Second Pass Approval	3,019.7		
			3,029.3	
Jul 10	Price Indexation		0.1	2
Jun 12	Exchange Variation		(119.6)	
Jun 12	**Total Budget**		2,910.2	3
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – US Government (AT-P-SCF)	(36.7)		
	Other Contract Payments / Internal Expenses	(3.5)		4
			(40.2)	
FY to Jun 12	Contract Expenditure – US Government (AT-P-SCF)	(205.0)		
	Contract Expenditure – US Government (AT-P-AHV)	(4.5)		
	Contract Expenditure – Navy – Empire Test Pilots' School	(0.9)		5
	Contract Expenditure – US Government (AT-B-ZBZ)	(0.2)		
	Other Contract Payments / Internal Expenses	(3.0)		4
			(213.6)	
Jun 12	**Total Expenditure**		(253.8)	
Jun 12	**Remaining Budget**		2,656.4	

Notes	
1	This amount represents the DMO Budget prior to achieving Second Pass Approval by Government.
2	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $0.1m, applied only to the portion of the budget approved at first pass. From July 2010 all project budgets were approved by government in out-turned dollars including AIR 9000 Ph8.
3	This figure does not sum precisely due to rounding.
4	Other includes travel, contractor support, legal support and general support activities.
5	Project contribution to reimburse Navy for the training of a Test Pilot and Flight Test Engineer at the Empire Test Pilots' School.

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		38.2	FMS	Variance results from larger than previously budgeted June 2012 Qtr FMS payment in response to an accelerated aircraft production schedule.
			Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
175.4	213.6	38.2	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
US Government (AT-P-SCF)	Jun 11	2,090.3	2,090.3	Variable	FMS	1
US Government (AT-P-AHV)	Aug 11	168.1	168.1	Variable	FMS	
US Government (AT-B-ZBZ)	Jan 12	12.3	12.3	Variable	FMS	

Notes

1	See below

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
US Government (AT-P-SCF)	24	24	MH-60R, synthetic training devices, and associated mission and support systems	1
US Government (AT-P-AHV)	Classified	Classified	Mk 54 Torpedoes	
US Government (AT-P-ZBZ)	Classified	Classified	AGM-114N Hellfire Air to Surface Missiles	

Major equipment received and quantities to 30 Jun 12

No equipment has been received as at 30 Jun 2012.

Notes

1	First aircraft delivery is expected in Dec 2013.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	MH-60R Helicopter	N/A	N/A	N/A	N/A	1
	ADF Unique Mission System Options	TBA	TBA	TBA	TBA	2
Preliminary Design	MH-60R Helicopter	N/A	N/A	N/A	N/A	1
	ADF Unique Mission System Options	TBA	TBA	TBA	TBA	2
Critical Design	MH-60R Helicopter	N/A	N/A	N/A	N/A	1
	ADF Unique Mission System Options	TBA	TBA	TBA	TBA	2

Notes	
1	MH-60R helicopter system requirements and design reviews not required as it is a MOTS aircraft procured through FMS.
2	The detailed Statement of Work is being developed with the US Navy, Sikorsky and Lockheed-Martin during April – May 2012. Schedule for review activities will not be finalised until US Navy is in contract with Sikorsky and Lockheed Martin, expected to be late-2012.

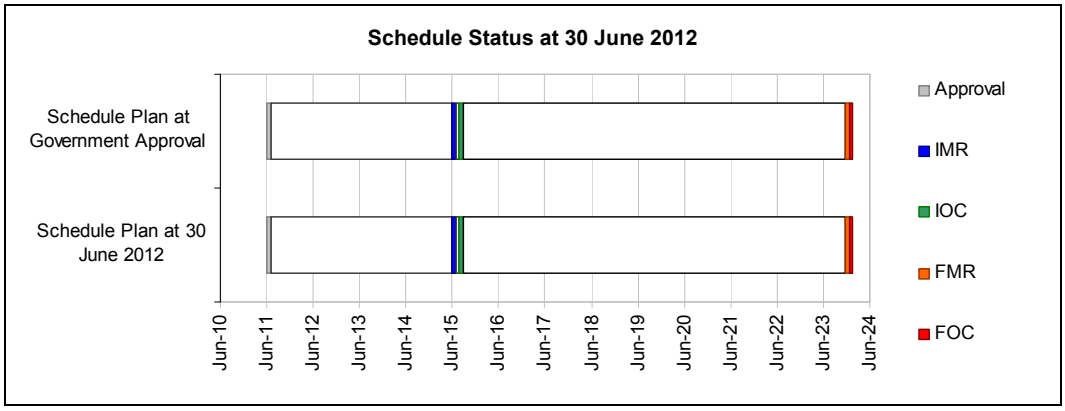
3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	ADF Unique Mission System Options	TBA	TBA	TBA	TBA	1
Acceptance	ADF Unique Mission System Options	TBA	TBA	TBA	TBA	1
	Acceptance of first MH-60R	Jun 14	Dec 13	Dec 13	Nil	
	Acceptance of final MH-60R	Sep 18	Aug 16	Aug 16	Nil	

Notes	
1	The detailed Statement of Work is being developed with the US Navy and Lockheed-Martin during April – May 2012. Schedule for Test and Evaluation activities will not be finalised until US Navy is in contract with Sikorsky and Lockheed Martin, expected to be late-2012.

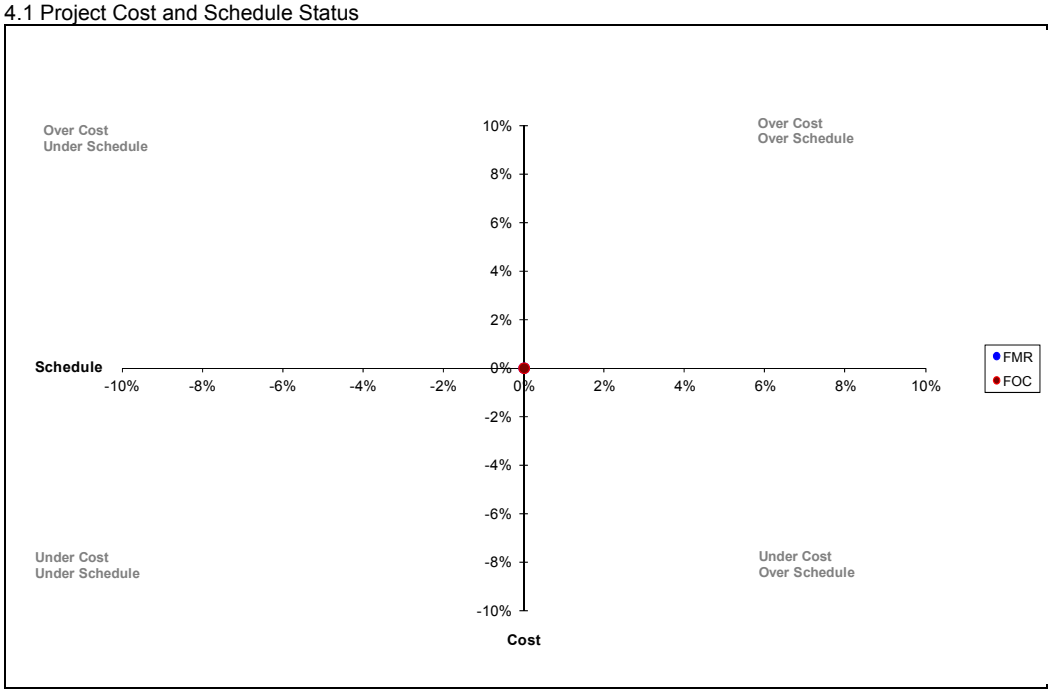
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation /Implications
In-Service Date (ISD)	Jun 14	Jun 14	0	
Initial Materiel Release (IMR)	Jun 15	Jun 15	0	
Initial Operational Capability (IOC)	Aug 15	Aug 15	0	
Materiel Release 2 (MR2)	Dec 16	Dec 16	0	
Materiel Release 3 (MR3)	Jun 19	Jun 19	0	
Final Materiel Release (FMR)	Dec 23	Dec 23	0	
Final Operational Capability (FOC)	Dec 23	Dec 23	0	



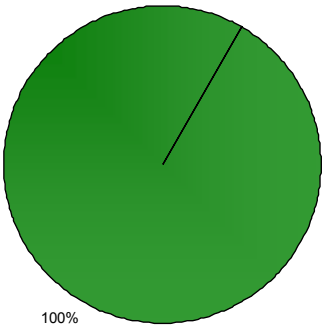
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	**Green:** Project currently meeting capability requirements as expressed in the Material Acquisition Agreement and supporting suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities.
	Amber: N/A
	Red: N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
N/A	N/A
Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
Facilities. The establishment of the training and squadron complex may be affected by construction delays, leading to an impact on cost, performance and schedule, because the facilities project has been delayed by cost and scope issues with the result that IOC is delayed by up to 6 months.	MH-60R Project Office (PO) to provide support to DSG facilities team to recover schedule where possible. Provision will be made, in consultation with HQ Fleet Air Arm, for the use of temporary or shared hangar and administrative facilities, if required. The MH-60R PO has sought and gained Ministerial approval to accept and operate the initial batches of MH-60R in the US to consolidate training and to mitigate the facilities risk. Continued access to US Navy training devices and facilities.

Certification. There is a chance that Design Acceptance will be affected by the inability to use Informed Recognition of Prior Acceptance (iRPA), leading to an increased Commonwealth certification effort and/or inability to source required level of data, with the result that the cost increases and schedule is not met, or there is a permanent capability gap.	Airworthiness Issue Paper (AwIP) 001 – Single Pilot vs Dual Pilot operations addresses the main concern with the difference between RAN and US Navy configuration, role and environment (CRE). Due diligence visit to the US (early 2012) to investigate facilities and organisations for visibility of key MH-60R Authorised Engineering Organisation (AEO) related processes. Perform Statement of Operating Intent (SOI) comparison between US Navy and RAN. PO perform full CRE assessment to support design acceptance for each airworthiness milestone. This will include review of the Aircraft Environment and Usage Comparisons to be provided by the US Navy as part of the FMS case to identify potential CRE scope issues.
Training System. Material Release 2 milestone may be affected by lack of an organic training system leading to an impact on trainee throughput, because the US Navy are unable to deliver Training Devices to the contracted schedule, with the result that the training system will not be established by February 2015.	Approve the US Navy to enter into contract with the OEM for a US Navy baseline variant of the Training Devices and introduce Engineering and Contract Change Proposals to incorporate the unique Australian requirements without incurring schedule delays. US Navy to identify schedule compression strategies for Australian unique requirements, ie double shift production, air freight the devices. Commonwealth to work with the US Navy to identify areas where Commonwealth staff can work alongside US Navy staff for design reviews and acceptance testing, and
Crashworthiness. There is a chance that crashworthiness certification (and therefore design acceptance) will be affected by the requirement to comply with Airworthiness Directive (AD) 03/2009, leading to unnecessary modifications and or additional work to gain waivers, with the result that cost is increased and schedule is not met.	An AwIP is being developed to detail the shortfalls. Future iterations will conduct a Cost Benefit Analysis to determine if any modifications are cost effective, and otherwise, waivers will need to be applied for. Continuous engagement with relevant stakeholders, particularly Director General Technical Airworthiness. Thorough Cost/Benefit Analysis
Issue of Flight Clearance Recommendation. The issue of a Special Flight Permit (SFP) for In-Service Date may be affected by late delivery of the USN Flight Clearance Recommendation because of the timing and duration of the aircraft test program for 'export variant' configuration changes from the USN baseline with the result that ISD will be delayed.	Liaise with USN to amend the schedule for the test program to finish earlier. Compress schedule required between receipt of the Flight Clearance Recommendation from the USN and the Airworthiness Board. Revert to baseline USN configuration, or minimise the configuration changes, and thereby reduce the test requirements. Continue to utilise USN aircraft via extended OJT or potential USN aircraft lease. Delay the Airworthiness Board as late as possible, whilst still achieving ISD.

Potential future risk to the MH-60R capability. One project objective as per second pass approval is to maintain the same configuration as the US Navy MH-60R through life of type in order to realise economies of scale, maintain combat capability parity, and to manage obsolescence. If a Capability Assurance Program is not established and funded, the Australian MH-60R will quickly become an orphan product.	Capability Development Group to provide for the block upgrade program by insertion of a MH-60R Capability Assurance Program in the Defence Capability Plan.

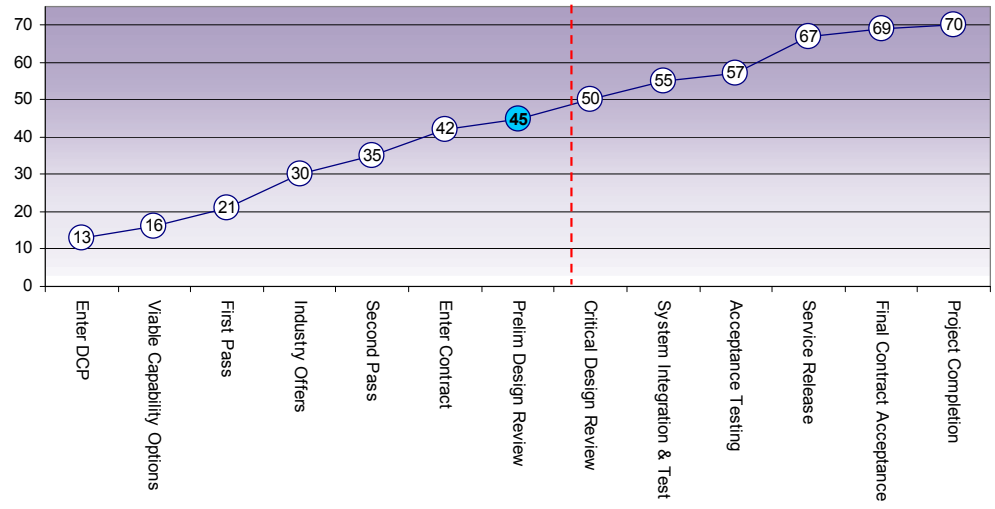
6.2 Major Project Issues

Description	Remedial Action
Unapproved Overseas Travel. A number of project milestones have been affected by overseas travel restrictions that prevent PO participation in a number of key engineering, project management and airworthiness activities in the USA. The necessity for overseas travel was detailed in the Government second pass submission and highlighted in the 3 Jul 12 project Gate Review.	The PO will continue to maximise the use of the Resident Project Team, video conferencing and telephone conferencing. There will be increased travel by USN and contractor staff to Australia, funded through the FMS case. The project will use contracted staff to represent overseas rather then ADF or APS staff.
The project has been affected by the non availability of the Australian through-life support contractor warehouse not being available due to delays by the US Navy in letting a contract. Spare parts are being delivered into temporary facilities.	The PO will establish a warehouse facility with related supply support arrangements in Jacksonville, Florida, to house spares and to support Australian flight operations in the USA. Warehousing will transition to Australia when the training detachment completes in late 2014.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	6	6	6	7	6	7	7	45
Preliminary Design Review	Project Status	9	7	7	6	6	7	7	49
	Explanation	• **Schedule:** The MH-60R production line is mature. The Project has negotiated early delivery dates for ADF MH-60R. The training program in support of ISD has been agreed and will be delivered by the US Navy on schedule. • **Cost:** The overall Estimate at Completion is projected to be within project guidance. The Project has benefitted from economies of scale from the US Government multi-year buys of aircraft and key components. • **Requirement:** There are no departures from the MOTS product approved at Government second pass. The MH-60R design and production line are mature. • **Technical Understanding:** Supply Support Analysis has been completed. The Project is awaiting incorporation of analysis results into US Navy contracts with their prime suppliers.							



2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Whilst an FMS program affords a number of advantages, the transfer of a significant amount of project management and engineering functions to the US Government implementing agency (NAVAIR PMA299) and the weak bargaining position of the Commonwealth, increases the project's exposure to risk (technical, schedule and cost). The resultant level of risk and complexity is often understated and poorly understood. The level of Commonwealth contract and financial management involvement and oversight of industry is very low in comparison to that mandated for Direct Commercial Sale (DCS) contracts, yet both procurement methods confront similar issues. Adequate Commonwealth participation in key project management and technical oversight activities in the US, as provided for in the Government Second Pass submission, is critical to provide the required level of contract management.	Contract Management
The recruitment process lead times for candidates not already within the ADF or Australian Public Service can create significant extended vacancies within the Project workforce, and this is exacerbated by the relatively short notice that Defence personnel are obliged to provide for internal transfers.	Resourcing

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	RADM Mark Campbell
Branch Head	CDRE Tony Dalton
Project Director	CAPT Scott Lockey
Project Manager	CAPT Peter Ashworth

Project Data Summary Sheet[239]

Project Name	**NEW AIR COMBAT CAPABILITY**
Project Number	**AIR 6000 Phase 2A/2B**
Capability Type	Replacement
Service	Royal Australian Air Force
Government 1st Pass Approval	Nov 06
Government 2nd Pass Approval	Nov 09 (Stage1)
Total Approved Budget (Current)	**$2,334.0m**
2011-12 Budget	**$58.3m**
Project Stage	Enter Contract
Complexity	ACAT 1

Section 1 – Project Summary

1.1 Project Description

The AIR 6000 New Air Combat Capability (NACC) Project aims to introduce a new air combat capability that will meet Australia's air combat needs out to 2030 and beyond. On current plans, AIR 6000 Phase 2A/B program will acquire no fewer than 72 Conventional Take Off and Landing (CTOL) Joint Strike Fighter (JSF) aircraft to establish three operational squadrons, a training squadron and necessary supporting/enabling elements to replace the F/A-18A/B Hornet capability.

AIR6000 Phase 2A/B Stage 1 of the project will acquire an initial tranche of 14 CTOL F-35 JSF aircraft and associated support and enabling elements.

Lockheed Martin is contracted to the **United States** (US) Government for the development and production of the F-35 JSF. The aircraft and associated support systems are being procured through a government to government co-operative agreement with the US and JSF partner nations, including the United Kingdom (UK), Canada, Italy, Denmark, Norway, Netherlands and Turkey.

1.2 Current Status

Cost Performance

As at 30 June 2012, project AIR 6000 Phase 2A/2B has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

[239] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

Schedule Performance

During 2011-12 Australia conducted an independent Schedule Compliance Risk Assessment Methodology (SCRAM) Review of the JSF Program. The key finding was that the principle organisations contributing to the Australian Initial Operational Capability (IOC) success (The US JSF Program Office, the JSF Prime Contractor – Lockheed Martin and the DMO AIR6000 NACC Program Office) are capable of delivering the F-35 capability to avoid an Air Combat Capability Gap.

In the 2012-13 Budget the Australian Government confirmed its commitment to the first two JSF aircraft but deferred the acquisition of the subsequent 12 aircraft by two years. This decision was taken to maintain alignment with the US Program which had recently deferred the acquisition of 179 Aircraft.

Materiel Capability Performance

The US has extended the development and operational test schedules. A key element of materiel capability performance and a major schedule driver is software development. The current planned Block 3 version of software is considered sufficient for Australia's Initial Operational Capability (IOC) performance requirements. Potential changes to software scope, development and/or releasability constraints could threaten this consideration. Correspondingly, the NACC project office is closely monitoring software development and examining contingency plans whereby initial training and test aircraft may be operated with an earlier software version.

1.3 Project Context

Project	Explanation
Background	Project AIR 6000 was established in 1999 to replace the air combat capabilities provided by the F/A-18A/B and F-111 fleets. In 2002 Government identified the Lockheed Martin F-35 JSF as the preferred option and joined the System Development and Demonstration (SDD) phase of the JSF Program as the eighth (and last) Partner. At this time the project discontinued the competitive evaluation under AIR 6000 and was retitled the New Air Combat Capability (NACC) Project. The subsequent decision by Government to acquire the F-35 JSF has been taken progressively including: • Providing First Pass approval in November 2006, which included agreement to join the next phase of the JSF Program and funded project AIR 6000 Phase 1B detailed definition and analysis activities to support Government Second Pass approval for AIR 6000 Phase 2A/B. • Signing the multilateral Production, Sustainment and Follow-on Development (PSFD) Memorandum of Understanding (MoU) in December 2006 to allow entry into the next stage of the JSF Program. • AIR6000 PH2A/B Stage 1 Approval in November 2009 to acquire 14 CTOL JSF aircraft and associated support and enabling elements necessary to establish the initial training capability in the US, commencing in 2014, and to allow commencement of Operational Test in the US and Australia. In the 2009 Defence White Paper, Government confirmed that it plans to equip the Royal Australian Air Force (RAAF) with around 100 F-35 JSF aircraft. AIR6000 Phase 2A/B Stage 2 will acquire at least 58 CTOL JSF aircraft and enabling elements. **In May 2012 the Government announced a two year deferral to the acquisition of JSF aircraft beyond the first two. The impact on materiel delivery and capability readiness dates is under review and will be subject to subsequent approval by Government.**

Uniqueness	The JSF Program was established by the US Government as the first international collaborative development program for a US military aircraft. The program includes initial design, production, follow-on development and through life support of the JSF global fleet. The JSF Program is expected to deliver over 3000 aircraft to the eight MoU Partners (with the US to acquire approx 75% of the total) with the potential for significant additional aircraft procurements by Foreign Military Sale (FMS) customers. The JSF is characterised by a low observable (stealth) design, internal weapons and fuel carriage, advanced electro-optical and infrared sensors, long range, the ability to employ a wide range of air-to-surface and air-to-air weapons, advanced communications suite to enable network centric operations, state of the art prognostics and health management, a single interchangeable engine and radically reduced support requirements. Due to strict US export restrictions imposed on the JSF Air System, direct commercial sale is not permitted. JSF aircraft and associated supporting systems will be acquired by Australia under the PSFD MOU arrangements. Key factors are: • The US Government will contract with Lockheed Martin and engine manufacturers on Australia's behalf in accordance with US contracting laws, regulations and procedures. • The Joint Program Office (JPO) acquisition strategy is for 11 annual **Low Rate Initial Production** (LRIP) contracts, transitioning from a Fixed Price Incentive Fee to a Firm-Fixed Price at the appropriate time. • Each contract will require a separate **Partner Procurement Request (PPR)** from each partner nation defining their requirements for that buy. PPRs are submitted two years ahead of contract and four years ahead of delivery. • Aircraft to be delivered under Phase 2A/B Stage 1 will be acquired under four separate annual contracts commencing with LRIP 6. • The Australian JSF capability is to be supported under a global support arrangement (referred to as 'Autonomic Logistics Global Sustainment') through performance-based contracts. As well as providing capability and programmatic benefits, a key aim of Australia's participation in the JSF Program is to embed Australian industry in the JSF global supply and support chain for the life of the JSF Program. The Commonwealth continues to work with the Prime Contractor Lockheed, its JSF industry partners and their sub contractors to achieve long term industry outcomes for Australia.

Major Challenges	The JSF is a large and complex program and many challenges remain. While as a MoU Partner Australia does have a role, overcoming technical challenges is primarily a US responsibility. The major challenges facing the NACC project are: • **Replanning the program to accommodate the two year deferral, whilst also ensuring there is no risk of an air combat capability gap.** • Complete the necessary workforce planning required to transition the JSF into service. • Resolve arrangements for pooling of JSF partner resources (including aircraft, support equipment and personnel) at the US Integrated Training Centre. • Improved understanding of JPO requirements development processes and the US Defense Federal Acquisition Regulation Supplement (DFARS) contracting framework in order to optimise execution of Australia's contracts. • Scope and plan the system integration activities necessary to introduce the JSF into service. • Appropriately manage **the distribution of information in the JSF/NACC Program to interested stakeholders.** • Support the ongoing consultation and engagement of the public on noise issues associated with RAAF Base Williamtown. • Improve understanding of the full scope of security implications of procuring and operating the JSF aircraft. • Implementing an industry support program to assist Australian industry to win JSF related contracting opportunities.
Other Current Projects/Sub-Projects	**AIR JSFSDD – Participation in the JSF SDD Program:** The contribution to the SDD program is in two parts, a cash component of SDD funding of US$144m, and a non-financial component of US$6m with the Defence Science and Technology Organisation (DSTO) conducting a Pacific Rim Command, Control, Communication, Computing, Intelligence, Surveillance, and Reconnaissance (C4ISR) study. All AIR JSFSDD financial milestones have been completed. The US SDD Phase is due to be closed in 2016 following the release of Block 3 software. **AIR 6000PH1B – Detailed Analysis and Acquisition Planning (AUS$100M):** AIR 6000 Phase 1B focused on the analysis and risk mitigation activities necessary to support Government's procurement decision on the JSF and to support Australian defence industry participation in the JSF Program. The primary financial activity was provision of Australia's shared cost contribution to the US JSF Program in accordance with our obligations as a Program partner in the PSFD Phase. Apart from ongoing funding to support some outstanding contracts, Phase 1B is complete and the NACC Project is now in the acquisition phase.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
AIR 5402 Air to Air Refuelling Capability	Provision of five new generation Airbus A330 Multi-Role Tanker Transport (MRTT) aircraft.	Air to Air refuelling support for extended range/duration missions.
AIR 5077 Airborne Early Warning and Control Aircraft	Provision of six Airborne Early Warning and Control aircraft.	Increased radar detection and communication capabilities to enable large force coordination between JSF and other aircraft.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Nov 09	Original Approved		2,751.6	
May 12	Real Cost Decrease		**(204.4)**	1
Jul 10	Price Indexation		351.0	2
Jun 12	Exchange Variation		**(564.2)**	
Jun 12	**Total Budget**		**2,334.0**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – US Government (PSFD MoU)	**(68.7)**		
	Other Contract Payments / Internal Expenses	**(2.5)**		3
			(71.2)	
FY to Jun 12	Contract Expenditure – US Government (PSFD MoU)	**(38.8)**		
	Contract Expenditure – US Government - Low Rate Initial Production Contract (LRIP) 6 - Long Lead	**(8.1)**		
	Other Contract Payments / Internal Expenses	**(11.8)**		**4**
			(58.7)	
Jun 12	**Total Expenditure**		**(129.9)**	
Jun 12	**Remaining Budget**		**2,204.1**	

Notes	
1	**A Real Cost Decrease budget adjustment was applied to AIR 6000 Phase 2A/B based on an incorrect interpretation of the Government's decision to vary the NACC Program. With subsequent advice, the reduction has been re-instated. The re-instatement occurred after the finalisation of the 2011-12 reporting period. The project's total approved budget has remained the same as intended by Government.**
2	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $70.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $280.8m having been applied to the remaining life of the project.
3	Other expenditure for this period is primarily associated with travel, minor office expenses and contractors.
4	**Other expenditure for this period is primarily associated with: activity to integrate NACC specific information systems into the Defence Information Environment (DIE) ($4.7m); F-35 base planning and facility design ($1.7m); and the NACC Industry Support Program ($1.9m).**

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**Minor variance associated with less favourable exchange rate.**
			Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
		0.4	FOREX Variation	
			Commonwealth Delays	
58.3	**58.7**	**0.4**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
US Government (PSFD MoU)	Dec 06	137.0	**158.0**	Various	MoU	1
US Government (LRIP 6 Long Lead)	**May 11**	**22.0**	**31.4**	**Fixed Price Incentive**	**USG Contract**	**2**

Notes

1	Contribution to PSFD MoU shared costs based on proportionality principle: i.e. number of aircraft purchased as a percentage of entire partner fleet. Commitment via MoU signature in December 2006 though baseline price basis is 2002. Covers period from 2010 to 2014 as approved by Government in November 2009. **The PSFD MoU 'contract' is a 'variable' priced 'contract' in that it is updated annually to reflect both estimated shared costs and escalation.**
2	**Australia's first aircraft procurement requires initial commitment to Long Lead items and services or Advanced Acquisition contracts covering air systems and propulsion. These contracts ultimately form the basis of the air systems and propulsion contracts for the complete systems – per Section 1.3 'Uniqueness'.**

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
US Government (PSFD MoU)	N/A	N/A	Australia's contribution to shared costs from 2010 to 2014 based on the purchase of 100 aircraft. Includes contribution to production tooling. US overhead cost of running program, Follow on development and shared sustainment activities.	1
US Government (LRIP 6 Long Lead)	**2**	**2**	**Provision of Advanced Acquisition items and services for two aircraft required to cover Australia's participation in LRIP 6 acquisition contract.**	

Major equipment received and quantities to 30 Jun 12

No major equipment deliverables planned until 2014.

Notes

1	No equipment delivered as part of this contract.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Preliminary Design	JSF Air System (CTOL Variant)	Mar 03		July 03	4	1
Critical Design	JSF Air System (CTOL Variant)	Apr 04	Feb 06	Feb 06	22	2

Notes	
1	Aircraft weight was the major issue that delayed the closure of the Preliminary Design Review (PDR) by approximately three months.
2	Design refinements following PDR failed to achieve the weight savings initially expected and considerable additional design effort was required. The original planned CTOL Critical Design Review (CDR), planned for April 04, was re-scheduled to February 2006 after the redesign effort was complete and included the 'roll up' of many lower-tiered reviews.

3.2 Test and Evaluation Progress

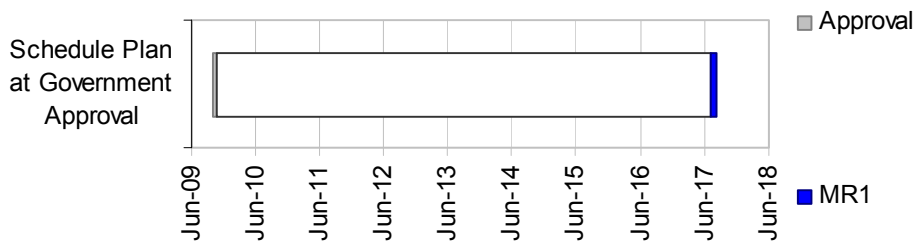
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Acceptance	Accept and deliver two (LRIP 6) aircraft to US ITC	Mar 14	May 14	Sep 14	5	1
	Accept and deliver aircraft 3-14	Dec 16		**TBA**		**2**

Notes	
1	The delivery profile of Australia's first two aircraft will be finalised and agreed as part of the LRIP6 contracting cycle, **however the current basis of planning is for delivery in April and May 2014.**
2	**In line with the guidance from Government the acquisition of Aircraft 3-14 has been deferred. Further details on the acquisition plans of these aircraft will not be known until later in 2012 when Government considers the broader air combat picture.**

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Materiel Release #1 (MR1)	Sep 17	**TBA**		**Because the project was not scoped to IOC, the term IMR was not used, instead MR1 was used to capture the scope for this stage of the project.** **MR1 previously represented the delivery of 14 aircraft and associated support equipment. The deferral of aircraft 3- 14 necessitates a review of the acquisition plan and this milestone definition.** Achievement of IMR and subsequent Materiel Release and Capability Milestones (IOC/FOC) is dependent on Phase 2A/B Stage 2 approval.
Initial Materiel Release (IMR)	N/A	N/A	N/A	
Initial Operational Capability (IOC)	N/A	N/A	N/A	
Final Materiel Release (FMR)	N/A	N/A	N/A	
Final Operational Capability (FOC)	N/A	N/A	N/A	

Schedule Status at 30 June 2012

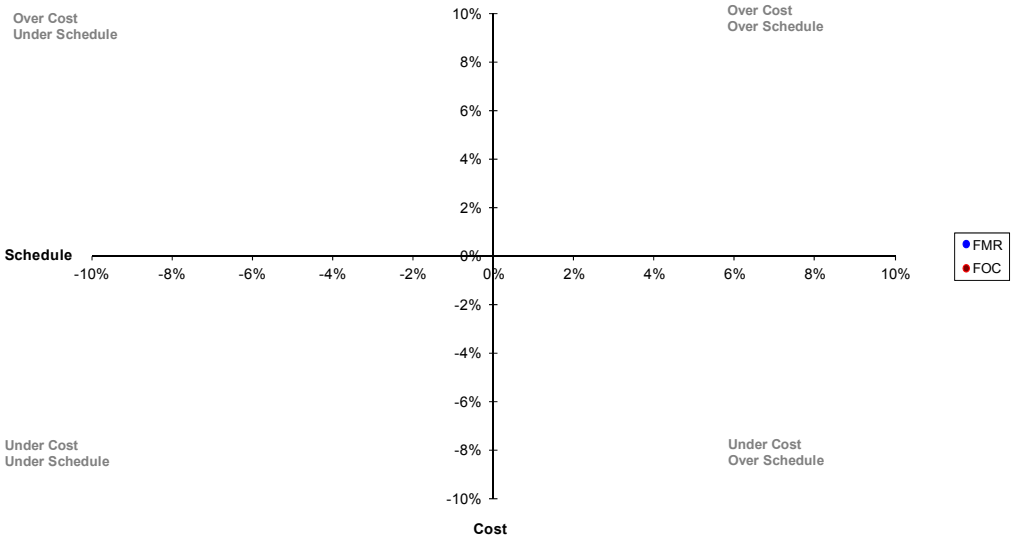


Note

With the indefinite deferral of MR1 a graphical representation of the new schedule is impractical. A graphical representation of an updated schedule will be re-introduced once government deferral of MR1 is finalised and scope for subsequent milestones is defined.

Section 4 – Project Cost and Schedule Status

4.1 Schedule - Project Cost and Schedule Status



Note
Since FMR and FOC scope and schedule have not been fully defined, it is not possible to graphically represent current cost and schedule variance from the original plan.

Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
This information will be provided once a new project baseline is defined and an associated Materiel Acquisition Agreement is established and executed in early 2013.	Green: **N/A**
	Amber: **N/A**
	Red: N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Workforce – There is a chance the NACC project will not have access to sufficient pilots and maintainers for initial JSF training and transition into service of the new capability because of the requirement to simultaneously support and operate multiple platforms.	Pro-active careful coordination between all the organisations with a responsibility for the workforce to ensure that people are recruited, released, and trained or re-skilled at the right time to meet critical project milestones.
Technical Risks – The JSF is a highly complex project and will carry high technical risk through the design, production and implementation phases. Software development is seen as the major risk and schedule driver.	Independent DSTO analysis of technical risks **is ongoing and continues to be** incorporated into project planning. **The decision to delay the acquisition of JSF aircraft will afford the program additional time to reduce and/or mitigate identified risks.** Should software development risks be realised, consideration will be given to using an earlier software release to meet IOC schedule requirements.
US Programmatics – There is a chance that current and potential future US Defense and Congressional reviews result in **further delays to Australia's IOC.**	**This risk was realised in the US 2013 Presidential Budget, where the US Government elected to defer production by 179 aircraft, thereby saving US$15 Billion over the coming five years. Whilst the NACC project remains subject to US programmatic risks of this type, the likelihood and impact of further major US programmatic changes are diminishing because:** **1. The JSF aircraft is now reaching a mature state; and** **2. There is a need to replace increasingly costly and obsolete legacy aircraft.**
Aircraft Production Costs – With annual contracting, aircraft costs are exposed to uncertainties relating to variations in procurement quantities and Lockheed's ability to meet projected production learning curve efficiencies.	**There has been no additional aircraft contracts agreed between the JSF Program Office and the contractor Lockheed Martin. Last year's LRIP 5 contract is still under negotiation**. The US has moved from a 'cost plus' to a 'fixed price' incentive contracting approach two years earlier than originally planned. New fixed price contracts together with cost data from established contracts are progressively reducing cost uncertainty. In addition, the NACC project continues to review US Government and contractor estimates and conduct independent sensitivity analysis to assess NACC funding and contingency provisions – these are currently assessed as adequate.

System Integration. A significant task for the NACC project will be integration of the JSF Air System into the Defence environment, including: • integration of the Autonomic Logistics Information System (ALIS) ground support system with existing ADF hardware and software systems, and • platform to platform integration of the combat system necessary for optimum interoperability. The inherent complexity of software intensive integration and multiple stakeholders make this a high schedule risk activity.	Ongoing analysis of interfaces with other ADF platforms to ensure optimal interoperability. Participation in the US test activities will enable Australia to obtain greater understanding of the systems integration risks and issues and thereby develop appropriate treatment strategies. This may include the incorporation of Australian platforms and systems into the test program.
US Government Release Approvals. Previous acquisition programs with the US have experienced delays due to excessive processing time to acquire the necessary US Government release approvals. These approval processes are complex, inconsistent and in some cases are classified and not releasable to Australia. Given the highly sensitive and classified nature of the JSF capability, and Australia's position as an early acquirer of JSF, there is a probability of delays in the delivery of data and materiel to Australia in the early phases of the acquisition program.	Prior to Stage 2 approval the NACC Project Office will complete a comprehensive information needs analysis necessary to effectively operate and maintain the JSF aircraft. The needs analysis will be compared against the proposed suite of information and data to be provided through the MOU procurement process. Information and data release deficiencies, uncertainties and/or issues will be addressed though the engagement of senior US Government officials and the establishment of agreed, predictable and documented processes.

Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
Facilities: The Project has identified significant cost and schedule pressures for the facilities element of the program.	**Whilst facilities are not the core responsibility of the Project Office, it does have the lead for ensuring an appropriately coordinated facilities program is delivered. The recent decision to delay the program by two years will allow the program further time to refine cost pressure elements in the facilities program and optimise the schedule.**
JSF Program Contracting: The multinational shared contracting framework is extremely complex, relatively immature and considered a source of schedule risk.	**Ongoing engagement with the US JSF Program Office to better understand the contracting framework and processes. The 2012-13 decision to delay the further acquisition of aircraft beyond the first two will allow both the US and NACC Program Offices time to better understand the framework and associated processes.**

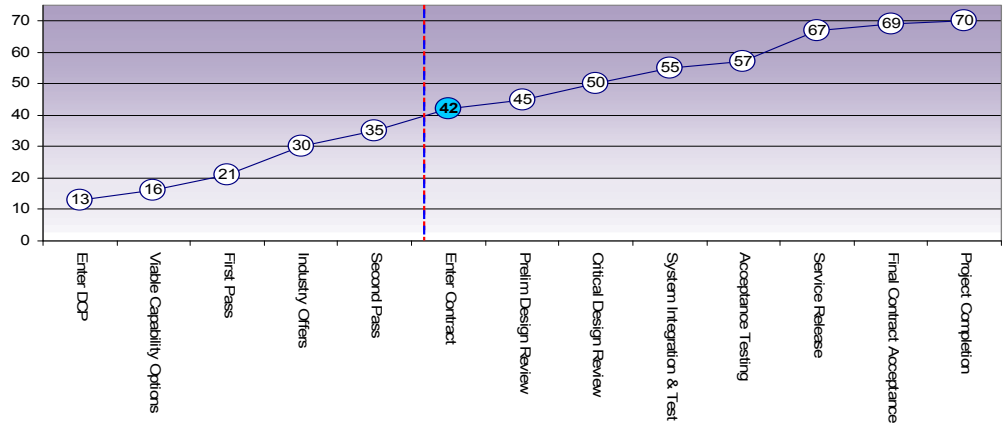
6.2 Major Project Issues

Description	Remedial Action
Noise associated with introducing the JSF at RAAF Base Williamtown is an ongoing sensitive issue and Defence is continuing to investigate options to reduce the noise impacts.	An environmental impact statement is currently being developed to further quantify the noise issue. **The project anticipates that noise will remain an ongoing issue to both project approval and implementation.**

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	6	6	6	6	6	6	6	42
Enter Contract	Project Status	6	5	6	6	7	5	5	40
	Explanation	• **Cost:** The cost maturity will remain immature whilst the US maintains annual contracting cycles. However, price trend data and contractual incentives do give some degree of cost confidence. • **Technical Difficulty:** **The JSF aircraft is an extremely complex weapon system, and whilst the platform is now relatively mature, significant challenges remain in developing the mature (Block 3) software.** • **Commercial:** JPO has increased their management oversight of Lockheed Martin (LM) including via a revised SDD contract structure which rewards measurable progress. Despite LM and JPO having successfully negotiated a fixed price incentive contract for LRIP 4, Australia's first two aircraft (LRIP 6) have not yet been contracted. • **Operations and Support:** Global sustainment arrangements are still relatively immature, however they are now becoming a focus for the US Project Office and Lockheed Martin. The NACC Project is refining its own sustainment costs based on JPO analysis and through a series of scenario-based 'war games'.							



2010-11 DMO MPR Status - - - - 2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
It is critical that Defence projects establish a robust requirements management regime to ensure capability is delivered to Government approved scope. To achieve this, the project has established a process which aims to ensure: • project delivery of scope in accordance with Government second pass approval; • a clear understanding between key stakeholders (ADF, US Government and Industry) of the materiel and services to be delivered; • effective risk mitigation to reduce the potential of non-delivery of minor elements of materiel, which remain important to the overall success of the NACC program.	Requirements Management
The NACC Project is one of the first Australian projects to directly engage in a cooperative contracting arrangement with the US and other foreign nations. The Project Office underestimated the complexities and resource overhead associated with direct engagement in the US contracting process.	**Contract Management**

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
A/General Manager	**Mr Andrew Cawley**
Division Head	AVM Kym Osley
Branch Head	AIRCDRE Roy McPhail
Project Director	N/A
Project Manager	Mr Bill Greenwood

Project Data Summary Sheet[240]

Project Name	**ARMED RECONNAISSANCE HELICOPTER**
Project Number	**AIR 87 Phase 2**
Capability Type	New
Service	Australian Army
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Mar 99
Total Approved Budget (Current)	**$2,028.9m**
2011-12 Budget	**$85.4m**
Project Stage	Acceptance Testing
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

This project was approved to provide a reconnaissance and fire support capability for the Australian Defence Force (ADF). The Project has contracted for delivery of 22 aircraft including an instrumented aircraft **(permanently fitted with in-flight test instrumentation),** a Full Flight and Mission Simulator, two Cockpit Procedures Trainer(s), Groundcrew Training Device(s), Electronic Warfare Mission Support System, Ground Mission Equipment, with supporting stores, facilities, and ammunition.

1.2 Current Status

Cost Performance

As at 30 June 2012, project AIR 87 Phase 2 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

In February 2011, Australian Aerospace advised the Project that it would not be able to deliver all 22 Armed Reconnaissance Helicopters (ARH) by July 2011 as currently contracted and that a potential further five month delay was likely. The Project **agreed** to a number of initiatives with Australian Aerospace **in order** to minimise the operational impact to Army's introduction into service plans under Plan Peregrine **resulting in the parties agreeing to delay the Operationally Capable Helicopter (OCH) Milestone until December 2011.**

In October 2011, Australian Aerospace submitted a formal Notice of Delay forecasting delivery of the remaining three retrofit aircraft in 2012 with the last aircraft to be delivered by July 2012 and therefore they would not be able to achieve the critical OCH Milestone by the contracted date of December 2011. The parties undertook a series of commercial negotiations agreeing to change the

[240] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

contract to move the OCH Milestone to September 2012 and Final Acceptance of the supplies to December 2012 with Australian Aerospace providing additional supplies and services as compensation for the delays.

The major contract milestone of Pre-Operationally Capable Helicopter was achieved **in November 2011** following the acceptance of the 19th final configuration aircraft **(ARH #22)**.

Materiel Capability Performance

As at 30 June **2012, 22** ARH have been Accepted by the Commonwealth; **two** are undergoing retrofit to the Initial Operational Test and Evaluation Readiness configuration; five are being used for training, one of which is also being used to support the remaining Type Acceptance test activities; and **15** are being used for collective training and Operational Evaluation in the operational squadron in Darwin. All three simulators have now been Accepted and are being used for aircrew training in Oakey and Darwin. **19** aircraft have had the enhanced anti-collision light modification incorporated and four aircraft have had the additional ballistic protection modification incorporated.

The rebaselined schedule includes all planned engineering activities required to deliver a fully compliant ARH System. Full compliance or Service Release of all Engineering Change Proposals is currently assessed as **September** 2012.

Operational Evaluation of the delivered ARH capability is being progressed by Army. Operational Evaluation for the next Operational Capability 2 milestone, a deployable squadron, **was initially conducted in** July 2011 **which failed to demonstrate a fully operational capability largely** due to ongoing technical serviceability issues with the TopOwl Helmet Mounted Sight and Display**, and** Australian Aerospace's immature maintenance and supply support **networks**. The TopOwl Helmet Mounted Sight and Display serviceability issue has been resolved with industry **and Australian Aerospace has implemented a number of initiatives to improve the performance of its sustainment networks. Further Operational Evaluation is planned to be conducted during Exercise Hamel in July 2012 with a decision on the declaration of the OC2 milestone to be made by October 2012.**

As at **30 June 2012** the ARH fleet had flown in excess of **10,859** hours with **2,483.7** hours flown in **2011/12**.

1.3 Project Context

Project	Explanation
Background	The Project received Government approval in March 1999 to replace the Army's aerial reconnaissance and fire support capability, which is currently based on the 1960s technology Bell Kiowa and Iroquois helicopters. The project's acquisition strategy specified substantial Australian Industry Involvement, and in **December 2001** the Commonwealth entered into separate contracts with Australian Aerospace for the Acquisition and Through Life Support programs. The first four aircraft were manufactured and assembled in France and the remaining 18 aircraft were manufactured in France and assembled in Brisbane. One ARH is fitted with flight test instruments to assist the test and evaluation of ARH capability upgrades. The training system relies heavily on simulation devices using the Full Flight and Mission Simulator and Cockpit Procedures Trainer(s) which were built in France, then shipped to Australia. The Full Flight and Mission Simulator and one Cockpit Procedures Trainer are installed at Oakey (Queensland); the second Cockpit Procedures Trainer is installed at Darwin (Northern Territory). The project experienced delays in achieving the Initial Operational Capability (IOC) critical contractual milestone, which was **originally contracted for** June 2007, resulting in the Commonwealth exercising its contractual right to stop all payments on the Acquisition Contract while maintaining payments on the Through Life Support Contract. Several factors contributed to the delay in achieving that milestone which in turn resulted in insufficient numbers of aircraft, training devices and logistics support in service to enable the required training outcomes. Australian Aerospace served a notice of dispute in October 2007 and the parties entered into a formal Dispute Resolution process over issues affecting both the Acquisition and Through Life Support contracts. The dispute resolution

	process resulted in both parties signing a Deed of Agreement in April 2008 which established a revised Acquisition Contract Price and Delivery Schedule, a revised Through Life Support Contract pricing structure that transitioned it to a Performance Based Contract, and established networks for work done by third-party support subcontractors. The re-plan included integration of a program necessary to retrofit all ARH to the final configuration where all mission systems are certified for employment by Army crews (known as the retrofit program). Partial payments to Australian Aerospace on the ARH Acquisition Contract were recommenced in April 2008, with full payment due on signing of the contract change proposals. Changes to the Acquisition Contract arising from the signing of the Deed of Agreement were agreed between the parties in February 2009, with full payment recommencing from this date. The commensurate major documentation amendment through a Contract Change Proposal was approved in May 2009, and the Contract Amendment was issued in June 2009.
Uniqueness	The Australian Tiger ARH design is based on the Eurocopter French and German Armies Tiger helicopters. The ARH design varies from the French and German designs through changes made to the following systems: • Secure radio communication systems, • Digital Map System, • Integration of the Hellfire Missile weapon system, • 70 mm rocket modifications, • Storage Bay and Digital Video Recorder, • Roof Mounted Sight multi-target tracking system, and • Helmet Mounted Sight and Displays in both cockpits. The ADF's Airworthiness certification of the ARH Tiger aircraft relies on the French airworthiness certification process undertaken by the French acquisition agency (Direction Générale de l'Armement). The ADF's Director General Technical Airworthiness recognises the French acquisition agency as a competent certification agency, and subsequently accepts the French acquisition agency certification of common Tiger systems used in the Australian ARH Tiger. In doing so, the French acquisition agency certification of the French aircraft became an integral part of the ADF's ARH certification plan. Consequently, delays in the French program flowed through to the ADF's ARH program and delivery of operational capability to the Army. This caused slippage in the aircraft and system certification, simulator development and aircrew training. The delays in the program resulted in the contractor failing to achieve the original contracted IOC critical milestone.
Major Challenges	The major challenges for the project remain ensuring the Prime Contractor (Australian Aerospace) delivers the remaining capabilities in accordance with the Acquisition Contract milestone schedule, and ensuring that adequate rates of effort are able to be maintained by Army. The most significant issue for the program continues to be the underperformance of maintenance and supply support networks. This is impacting the availability of serviceable Spares (Repairable Items and Breakdown Spares) and Support and Test Equipment at the required configuration to support the in-service fleet achieving required flying rates of effort and Australian Aerospace's ability to deliver **the remaining** aircraft on time from its retrofit program.
Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Mar 99	Original Approved		1,584.0	
Oct 02	Real Variation – Transfer	(18.2)		1
Dec 03	Real Variation – Transfer	(59.1)		2
Aug 04	Real Variation – Budgetary Adjustments	(2.2)		3
Sep 04	Real Variation – Transfer	(3.0)		4
Jun 05	Real Variation – Transfer	(4.0)		5
Aug 05	Real Variation – Budgetary Adjustments	(4.5)		6
			(91.0)	
Jul 10	Price Indexation		418.2	7
Jun 12	Exchange Variation		**117.7**	
Jun 12	**Total Budget**		**2,028.9**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – Australian Aerospace	**(1,590.2)**		8
	Other Contract Payments / Internal Expenses	**(142.5)**		9
			(1,732.7)	
FY to Jun 12	Contract Expenditure – Australian Aerospace	**(73.8)**		
	Other Contract Payments / Internal Expenses	**(6.4)**		**9**
			(80.2)	
Jun 12	**Total Expenditure**		**(1,812.9)**	
Jun 12	**Remaining Budget**		**216.0**	

Notes	
1	Transfer to Defence Support Group (DSG) Oakey Redevelopment Project to develop ARH specific infrastructure.
2	Transfer to DSG 1 Aviation Relocation Project (Darwin) to develop ARH specific infrastructure.
3	Administrative Savings harvest.
4	Transfer to Defence Science and Technology Organisation to fund studies in support of ARH.
5	Transfer to DSG to fund Air 87 facilities constructed as part of the Darwin 1 Aviation Relocation Project.
6	Skilling Australia's Defence Industry harvest.
7	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $414.9m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $3.3m having been applied to the remaining life of the project.
8	Includes first five years support costs of the TLS Contract (two years Pre-Implementation and the first three Contract Years), Preliminary Engineering Proposals & Indefinite Quantity tasks performed in Acquisition.
9	Other expenditure comprises: operating expenditure, contractors, consultants, Foreign Military Sales,

	research and development costs and other capital expenditure not attributable to the aforementioned contract and minor contract expenditure.

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**Variance is largely due to Australian Aerospace delays in Milestone Payment Schedule achievements.**
			Overseas Industry	
		(3.6)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(1.6)	Commonwealth Delays	
85.4	**80.2**	**(5.2)**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
Australian Aerospace	Dec 01	1,139.9	**1,470.8**	Variable	SMART 2000	

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
Australian Aerospace	22	22	Tiger Armed Reconnaissance Helicopter	

Major equipment received and quantities to 30 Jun 12
22 aircraft have been accepted by the Commonwealth. Engineering and maintenance arrangements established.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	ARH System	Mar 02		Feb 03	11	
	Aircrew Training Devices	Jun 02		Feb 03	8	
System Design	ARH System	Jun 02		Feb 03	8	1
	ARH System - Delta System Design Review	Mar 03		Apr 03	1	
	Aircrew Training Devices	Apr 03		Jul 03	3	
Preliminary Design	ARH Tiger	Oct 02		May 03	7	2
	Aircrew Training Devices	Mar 03		Oct 04	19	
Critical Design	ARH Tiger	Mar 03		Jul 04	16	3
	Aircrew Training Devices	Sep 03		Jun 05	21	4

Notes	
1	Reliance on the certification of the French Tiger variant was critical to the Australian design review and acceptance program. The DMO's ability to leverage from the French program was adversely impacted because the French program had not achieved design approval outcomes in the timeframe expected.
2	As the ARH is a variant of the French and German Tiger helicopters, the ADF Technical Airworthiness Authority planned to utilise the existing certification work undertaken by the French acquisition agency (Direction Générale de l'Armement).

3	The maturity of the ARH design has required ongoing engineering changes to the approved ARH product baseline presented to the Airworthiness Board at the In Service Date. As a result, subsequent flight testing is required to confirm contract compliance and operational acceptance of incorporated design changes to enable removal of Australian Military Type Certificate and Service Release limitations.
4	The Full Flight and Mission Simulator required customisation to both the visual system and the motion systems following contract signature in order to account for capability deficiencies associated with the proposed simulator design. A major cause of the delay in delivering training devices can be attributed to the efficacy with which the software provided from the aircraft manufacturer's test program is being managed to produce a high fidelity simulator.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Full Flight and Mission Simulator Contractor In-plant	Jul 04		Oct 07	39	
	Cockpit Procedures Trainer Oakey Contractor In-plant and On-Site	Jul 04		Jun 08	47	
	Cockpit Procedures Trainer Darwin Contractor In-plant and Army In-plant	Jul 04		Dec 08	53	
Acceptance	ARH					
	Type Acceptance Review Special Flight Permit	Oct 04		Jun 05	8	
	Australian Military Type Certificate	Jun 05		Oct 05	4	
	Aircrew Training Devices - Final Acceptance Test and Evaluation					
	Full Flight and Mission Simulator (Transition Training capability)	Feb 05		Nov 07	33	
	Full Flight and Mission Simulator (Full Training capability)	Feb 05		Nov 09	57	
	Cockpit Procedures Trainer Oakey	Feb 05		Nov 09	57	
	Cockpit Procedures Trainer Darwin	Feb 05		Feb 10	**60**	
	Acceptance					
	ARH #11	Jul 06		Apr 08	21	
	ARH #22	Apr 08	Dec 10	**Nov 11**	**43**	1

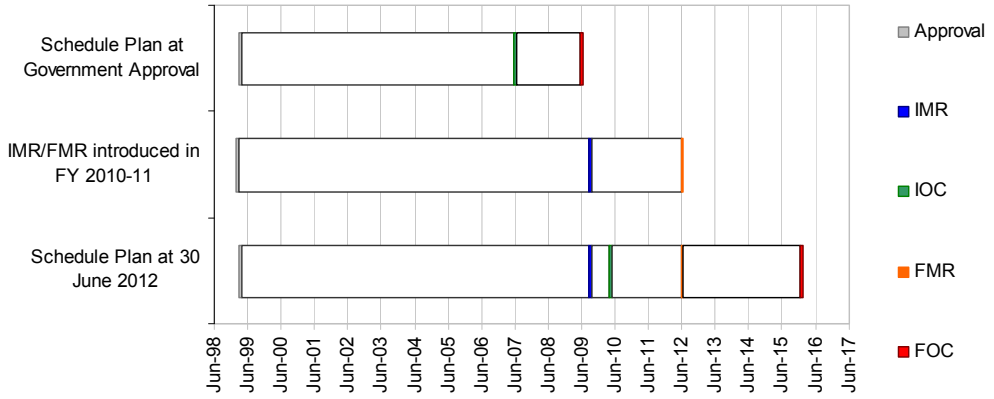
Notes

1	The acceptance of the 22nd production ARH **was** contracted for July 2011. **The** milestone **was achieved on 25 November 2011.** Note: Production aircraft (#22) is the 22nd aircraft accepted by the Commonwealth which is not to be confused with the milestone for the 22nd aircraft accepted in the Initial Operational Test and Evaluation configuration under the Acquisition Contract. Australian Aerospace is currently forecasting an Early Finish Date of **September 2012** for the 22nd aircraft accepted in the Initial Operational Test and Evaluation configuration milestone (ARH002 from retrofit).

3.3 Progress Toward Materiel Release and Operational Capability Milestones

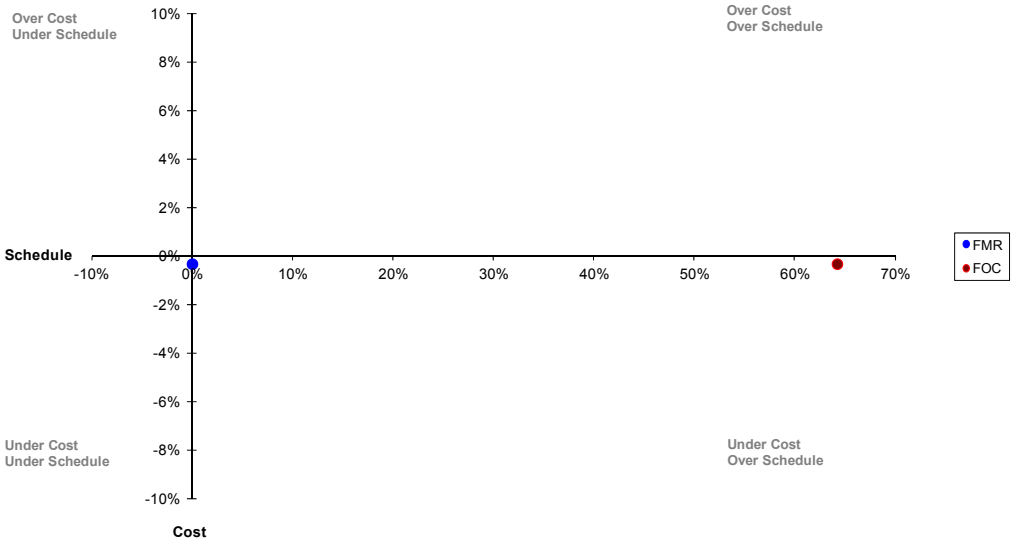
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Sep 09	N/A	
Initial Operational Capability (IOC)	Jun 07	Apr 10	34	Operational Capability 1 (OC1) (IOC) was granted by Chief of Army on 8 April 2010.
Final Materiel Release (FMR)	Jul 12	Jul 12	0	No FMR originally identified. Current FMR is the date agreed in Amendment No. 2 to the Project Air 87 Phase 2 Materiel Acquisition Agreement. **This date was not achieved, it is under review.**
Final Operational Capability (FOC)	Jun 09	**Jan 16**	**79**	**As a result of the reduction in flying rate of effort experienced by the ARH fleet, as well as a requirement to conduct amphibious operations from LHD ships, Army has amended its Acceptance into Operational Service Plan to reflect the associated training delays. Consequently, Chief of Army has advised that the previously anticipated achievement date of December 2012 will not be met, and that a date of January 2016 is now planned.**

Schedule Status at 30 June 2012



Section 4 – Project Cost and Schedule Status

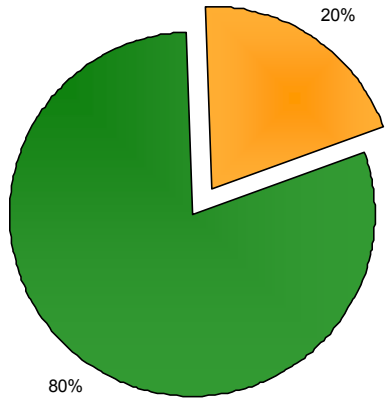
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Green:

The project delivered the capability elements required by the revised IMR date of 30 September 2009. The project is also on track to deliver all 22 Armed Reconnaissance Helicopters in the final configuration and have the required numbers of aircrew, groundcrew and technicians trained before the FMR date.

Amber:

Delivery of some long lead time Repairable Items (RIs) and Support and Test Equipment (S&TE) are currently forecast to occur after the FMR date. Commonwealth and contractor actively managing delivery of remaining RIs and S&TE items.

As the requirements for the Other DMO Fundamental Inputs to Capability elements are developed and contracted, the delivery of the required capabilities may not be able to be achieved by the FMR date.

Red:

N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that Aircrew Training and Operational Test and Evaluation will be affected by an inability to achieve required Rate of Effort leading to an impact on schedule and supportability.	Work with the Prime Contractor to improve supply chain management and performance.
There is a chance that Aircrew Training will be affected by limitations of the Aircrew Training Device (ATD) Night Vision System technical solution implementation leading to an impact on cost, supportability, safety and performance.	Undertake comprehensive assessment of Night Vision Device (NVD) implementation on the ATDs following on aircraft experience, and tune the ATD NVD performance to improve fidelity with the ARH System.
There is a chance that the achievement of the remaining major and critical milestones will be affected by the contractor's inability to deliver aircraft from its production and retrofit programs in accordance with its plan leading to an impact on schedule and supportability.	Project Office to maintain dedicated Project Planners to develop and maintain a Project Office Master Schedule linked to key activities in the Prime Contractor's Integrated Master Schedule. Regular Project Management Office meetings are held with the Prime Contractor to transparently monitor and maintain schedule progression. Contractual provisions (Stop Payment) to be enforced. **Renegotiate delivery schedule as required seeking appropriate compensation for late delivery of supplies.**
There is a chance that the achievement of the remaining major and critical milestones will be affected by the contractor's inability to meet the logistic element exit criteria as a result of its underperforming subcontractor maintenance and supply support networks leading to an impact on schedule and supportability.	Resolve remaining Spares and Support and Test Equipment provisioning lists and placement of orders. Actively manage delivery of remaining Spares and Support and Test Equipment. Collaboratively modify maintenance and supply chain configurations in the event that suppliers fail to deliver in accordance with contracted performance levels.
Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
There is a chance that the ability to generate the required flying Rate of Effort will be affected by the enabling Supplies delivered leading to an impact on cost, schedule, performance and supportability.	**Ensure accepted ARH Capability meets with contracted specifications.** **Where non-conformance occurs enforce the provisions of the Acquisition and Through Life Support contracts and advise Army of non-conformances through Airworthiness Issues Papers, Hot issues Briefs etc.** **Regular feedback through Project Management Stakeholder Group meetings and Operational Evaluation reporting.** **Commercial negotiations with Contractor, where applicable.** **Procurement of additional spares.** **Procurement of additional training devices.** **Offset a portion of aircraft Rate of Effort to training devices.**

There is a chance that the Project Scope baseline will be affected by the outcomes of Operational Evaluation leading to an impact on cost and schedule.	**Monitor Operational Evaluation reports.** **Negotiate any additional scope requirements through Project Management Stakeholder Group meetings.** **Agreed scope inclusions to be documented in up-issued Materiel Acquisition Agreement as required.**
There is a chance that acquisition staffing levels will be affected by delays to program delivery and additional acquisition requirements leading to an impact on cost.	**Seek extension to existing project positions.** **Negotiate Full Time Equivalent funding inclusion with Capability Development Group for all new scope inclusions.** **Raise issues early with Branch Human Resource management staff and raise Establishment Variation Proposals as required.** **Seek funding for External Service Providers as required.**

6.2 Major Project Issues

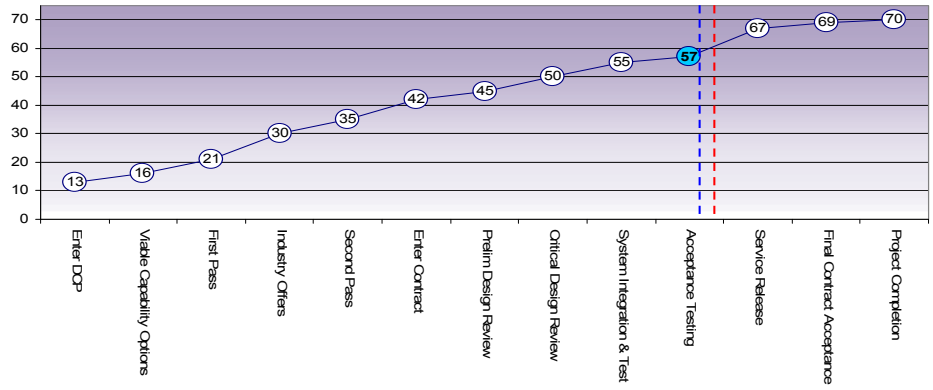
Description	Remedial Action
Timely establishment of supply and maintenance support networks. Issue updated to read: The ARH Rate of Effort has been affected by not having adequate maintenance and supply support networks established and working effectively leading to an impact on schedule, cost and supportability.	Establishment of maintenance support subcontracts in the exit criteria for key milestones has not yet assisted in mitigating this issue. Third party review of ARH maintenance and supply chain management, processes and structure. Potential requirement for the procurement of additional spares. **Contractor incentivised to return all Commonwealth owned Repairable Items inducted for repair with European suppliers prior to 31 October 2011 by 31 May 2012.** **100% stocktake of all Commonwealth owned Repairable Items with European suppliers conducted.** **100% stocktake of of all Commonwealth owned Repairable Items with Australian repair agencies or awaiting induction for repair with the Contractor to be conducted.** **Meetings conducted with Eurocopter and other European suppliers to facilitate improvements/establishment of repair pipelines.**
Assuring continuing staff supplementation to the Armed Reconnaissance Helicopter Project Office to ensure project outcomes are delivered.	**Issue ongoing with** additional resources being applied from other project and support areas within the Branch and Division **or through the engagement of External Service Providers** as required.
The achievement of the remaining major and critical milestones will be affected by the contractor's inability to deliver aircraft from its production and retrofit programs in accordance with its plan leading to an impact on schedule and supportability.	**Issue closed following approval of Contract Change Proposal 170 in February 2012.**
The achievement of the Pre-Operationally Capable Helicopter major contract milestone has been affected by the contractor's inability to deliver	**Issue closed following achievement of the milestone in November 2011.**

aircraft from its production and retrofit programs in accordance with its plan leading to an impact on schedule and supportability.	

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	8	8	8	8	9	8	8	57
Acceptance Testing	Project Status	**10**	8	9	**9**	9	6	9	**60**
	Explanation	• **Schedule:** In Service Date achieved in December 2004 with remainder of schedule well understood. • **Requirement:** Integration and testing has verified achievement of the majority of the endorsed requirements. Operational Test and Evaluation has validated delivery of a deployable troop capability through the granting of Operational Capability 1 by the Chief of Army. • **Technical Understanding: Operation and support of the ARH capability delivered to date is being undertaken by the relevant in-service support agencies. Formal transition in progress.** • **Commercial:** Contractor performance is unsatisfactory and improvement is required in order to ensure critical milestone achievement. • **Operations and Support**: ARH System elements have commenced transition to In-Service Managers.							



2010-11 DMO MPR Status - - - -	2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Aircraft still undergoing development by their parent Defence force or Original Equipment Manufacturer should not be classed as off-the-shelf.	Off the Shelf Equipment
Delays in the French program flowed through to the ADF's ARH program and delivery of operational capability to the Army. This has caused slippage in the aircraft and system certification, simulator development and aircrew training. The delays in the program have resulted in the contractor failing to achieve the IOC critical milestone.	Off the Shelf Equipment
Resolve or escalate minor disputes as they arise to prevent escalation to major contract dispute.	Contract Management
Use integrated teams with strong processes and empowered staff facilitated by appropriate contractual arrangements.	Resourcing Contract Management

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	RADM Mark Campbell
Branch Head	BRIG Andrew Mathewson
Project Director	**Mr Bruce Whiting (to Jul 11)** **Mr Brett Worsley (Jul 11–current)**
Project Manager	**Mr Bruce Whiting (to Jul 11)** **Mr Brett Worsley (Jul 11–current)**

Project Data Summary Sheet[241]

Project Name	**F/A-18 HORNET UPGRADE**
Project Number	**AIR 5376 Phase 2**
Capability Type	Upgrade
Service	Royal Australian Air Force
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	May 98
Total Approved Budget (Current)	**$1,875.5m**
2011-12 Budget	**$72.7m**
Project Stage	**Service Release**
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

The Air 5376 Phase 2 Project **was established** to upgrade the **existing** F/A-18 fleet to incorporate enhancements **to the aircraft's air defence capability. Enhancements are** being implemented in three distinct stages. The first **is to** enable the aircraft to more effectively perform its air defence role. The second **stage involves** enhancing pilot situational awareness, and the final stage **is** providing additional aircraft self protection.

In addition to **these hardware** upgrade**s** of the F/A-18 Fleet, each stage includes **new or** upgraded aircraft software **and** ground support and training systems.

1.2 Current Status

Phase 2.1	**Cost Performance** The Project was completed within budget.
	Schedule Performance The Project was completed ahead of schedule.
	Materiel Capability Performance Capability has been accepted into service.
Phase 2.2	**Cost Performance** The Project has achieved Technical and Contractual Completion within budget.
	Schedule Performance All Hornet aircraft have been accepted within schedule.
	Materiel Capability Performance Capability has been accepted into service.

[241] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

Phase 2.3	**Cost Performance** **As at 30 June 2012, project AIR 5376 Phase 2 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.**
	Schedule Performance **Materiel Release 2 was achieved in August 2011 with the major elements now in place to support Initial Operational Capability. Additionally, significant progress has been made with various elements of Final Materiel Release in support for achieving Final Operational Capability. The delivery of jammer pods and associated ground support equipment have delayed achievement of the FMR.**
	Materiel Capability Performance The radar warning receiver and data recorder elements have demonstrated their fitness for purpose and have been released for service. Acceptance and operational test and evaluation for the BOL-518 Counter Measures Dispenser System and the EL/L-8222 Electronic Counter Measures (ECM) pods indicate that these systems are also fit for purpose.
HACTS	**Cost Performance** **As at 30 June 2012, project AIR 5376 Phase 2 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.**
	Schedule Performance **The Hornet Aircrew Training System (HACTS) achieved Final Materiel Release in January 2012.**
	Materiel Capability Performance Ongoing upgrades **to the HACTS** are required to **align the system with developing** Hornet capabilities introduced by **continued aircraft** and weapon **system** upgrades.

1.3 Project Context

Project	Explanation
Background	**Following** the decision to select the F/A-18 **Classic Hornet** as the Royal Australian Air Force's (RAAF) multi-role fighter in 1981 the need to address equipment obsolescence and **develop aircraft** capabilities, has resulted in the **establishment** of the F/A-18 Hornet Upgrade Program Air 5376 (known as the HUG Program). Project Air 5376 Phase 2 is comprised of three sub phases; Phase 2.1 Radar upgrade, Phase 2.2 Avionics upgrade, and Phase 2.3 Electronic Warfare upgrade. An additional sub phase was created for the **associated** upgrade of the **HACTS**. Air 5376 Phase 2.1 **enabled** the **aircraft** to more effectively perform their air defence role. This included provision of a new fire-control radar, and an Electronic Protection Collaborative Development Program with the United States (US) Navy to develop Electronic Protection techniques for the radar. Air 5376 Phase 2.2, provides aircrew with enhanced situational awareness, by upgrading the avionics suite with the installation of the following equipment: • LINK 16 secure data link. The LINK 16 equipment **provides** a multifunction information distribution system; • An upgraded counter measures dispenser set; • **A** multi-purpose **colour screen** display group upgrade; • Upgraded digital moving map system **including** Tactical Air Moving Map Capability; • **A** joint mission planning system; and • **A** joint helmet-mounted cueing system. Air 5376 Phase 2.3 provides additional aircraft self protection with: • Replacement of the radar warning receiver with an updated Raytheon radar warning receiver for the whole fleet; • Supplementation of the counter measures dispenser system capability with a SAAB counter measures dispenser system thereby increasing expendable capacity; • Supplementation of the **radar** jammer capability with the Elta jammer pod; and • Enhancement of the aircraft data recording capability. The Air 5376 Phase 2 HACTS upgrade involves replacement of the obsolete Hornet Operational Flight Trainers with: • Three tactical operational flight trainers (2 at Williamtown, 1 at Tindal) configured to simulate Air 5376 Phase 2.2 **configured** aircraft **including** instructor operator stations and instructor/student debrief stations; and • Tactical readiness trainers **incorporating** advanced helmet mounted display.
Uniqueness	The Project Office performs the role of prime integrator for all Air 5376 Phase 2 sub phases. Boeing (St Louis) is contracted for the aircraft integration aspects. The US Navy, through Foreign Military Sales (FMS), is responsible for developing core aircraft software upgrades. New equipment is sourced directly from suppliers, either through FMS or direct commercial contracts. Contracts and FMS cases are placed incrementally as requirements mature. Therefore, the Commonwealth retains a significant portion of risk throughout the life of the project. Air 5376 Phase 2.2 included a collaborative program with the Canadian Forces for the development of the upgraded colour displays, achieving significant efficiencies for both countries. Air 5376 Phase 2.3 is installing some equipment which is not common with the US Navy and has not been integrated onto an F/A-18 A/B aircraft previously.

Major Challenges	There have been major challenges associated with Air 5376 Phase 2.3 due to the project office role as prime systems integrator, particularly considering the commercial and security **related** complexities of integrating disparate systems sourced from a diverse range of commercial and national entities. The key risks relate to the development and integration of aircraft and system software, as the systems had not previously been integrated and installed in other F/A-18 Hornet fleets. With the testing regime complete the residual challenge is the ability of the Australian Weapons System Support Flight (WSSF) to develop the Australian Unique Software load. Continued consultation with WSSF is enabling the project to work through any issues as they arise. The HACTS devices are heavily software-based, and the source code used to create the simulations is subject to export control from the US. This limits the ability of the Australian contractor, Raytheon Australia, to provide software changes to meet changing simulation requirements. This has been highlighted during incorporation of Australian unique software loads as a result of Hornet Upgrade activities.
Other Current Projects/Sub-Projects	N/A. All sub phases are addressed in this report.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
AIR 5416 Phase 1 Electronic Warfare Self Protection (EWSP)	AIR 5416 was a multi-phase project that was established to redress the EWSP limitations of selected ADF aircraft and therefore improve the survivability of these aircraft in combat.	AIR 5376 was dependent on AIR 5416 Phase 1 for the Full Scale Engineering Development of an indigenous Radar Warning Receiver and the Initial Design Activity and adaptability studies that focused on the design of a common EWSP suite that could be tailored for installation in the F/A-18 A/B aircraft.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
May 98	Original Approved		1,300.0	
Feb 99	Real Variation – Transfer	23.9		1
Aug 00	Real Variation – Transfer	11.3		2
Jul 01	Real Variation – Scope	(132.1)		3
Oct 02	Real Variation – Transfer	(0.2)		4
Oct 03	Real Variation – Scope	9.3		5
Aug 04	Real Variation – Budgetary Adjustment	(0.7)		6
Aug 04	Real Variation – Scope	(1.2)		7
Dec 04	Real Variation – Scope	(67.0)		8
Aug 05	Real Variation – Budgetary Adjustment	(2.7)		9
May 07	Real Variation – Scope	412.5		10
			253.1	
Jul 10	Price Indexation		323.5	11
Jun 12	Exchange Variation		**(1.1)**	
Jun 12	**Total Budget**		**1,875.5**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – The Boeing Company	**(293.7)**		
	Contract Expenditure – US Government (AT-P-LZY)	**(281.5)**		
	Contract Expenditure – US Government (AT-P-LDG)	**(124.3)**		
	Contract Expenditure – ELTA Systems Ltd	**(61.7)**		
	Contract Expenditure – Raytheon	**(71.0)**		
	Other Contract Payments / Internal Expenses	**(709.2)**		**12**
			(1,541.4)	
FY to Jun 12	Contract Expenditure – The Boeing Company	**(3.4)**		
	Contract Expenditure – US Government (AT-P-LZY)	**0.0**		
	Contract Expenditure – US Government (AT-P-LDG)	**(4.5)**		
	Contract Expenditure – ELTA Systems Ltd	**(36.4)**		
	Contract Expenditure – Raytheon	**(1.4)**		
	Other Contract Payments / Internal Expenses	**(25.3)**		**13**
			(71.0)	
Jun12	**Total Expenditure**		**(1,612.4)**	
Jun12	**Remaining Budget**		**263.1**	

Notes	
1	Transfer from other phases of AIR 5376.
2	Transfer from AIR 5376 Phase 1 Hornet Aircrew Training System.
3	White Paper considerations.

4	Transfer to Facilities.
5	Scope increase for Hornet Aircrew Training System.
6	Administrative Savings Harvest.
7	Transfer to Facilities.
8	Decrease for Radio Frequency Jammer.
9	Skilling Australia's Defence Industry harvest.
10	Scope increase to include Hornet Electronic Warfare Self Protection Suite upgrade being conducted under Phase 2.3.
11	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $314.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $9.2m having been applied to the remaining life of the project.
12	Other expenditure comprises: operating expenditure, contractors, consultants, other capital expenditure not attributable to the aforementioned top 5 contracts and minor contract expenditure. As the prime systems integrator, the Commonwealth is undertaking a strategy of incremental contracting of work packages as they are defined, this has included engaging in over 12 FMS cases with the US Government to support various stages of the project. Other expenditure includes an amount of **$86.2m on operating expenditure; $99.1m** on aircraft software upgrade FMS cases and an additional **$127.1m** on other major FMS cases for items such as the multifunctional information distribution system, joint helmet mounted cueing system, project risk reduction, and Hornet upgrade **support** activities. In addition, **$21.5m** on counter measures dispenser sets and pylon modification kits from SAAB AB, **$49.6m** on fleet modifications by Boeing Defence **and $30.6m** by BAE Systems Australia**, $5.7m on Hornet data recorder acquisition from ELBIT and $289.4m in other related capital expenditure.**
13	Other expenditure comprises: operating expenditure, contractors, consultants, other capital expenditure not attributable to the aforementioned top 5 contracts and minor contract expenditure. In particular, **$1.2m on aircraft software upgrade FMS cases and an additional $5.1m on other FMS cases, $1.0m** on operating expenditure**, $0.9m** on counter measures dispenser sets and pylon modification kits from SAAB AB, **$9.2m** in aircraft and pylon modification expenditure, **$2.1m on the radio frequency stimulator at the Joint Electronic Warfare Operational Support Unit, and $ 5.8m in other related** expenditure.

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		4.7	FMS	**Additional FMS payments made.**
		(6.1)	Overseas Industry	**Technical difficulties experienced with the Elta EL/L-8222 Jammer impacted Jammer delivery milestones.**
			Local Industry	
			Brought Forward	
			Cost Savings	
		(0.3)	FOREX Variation	
			Commonwealth Delays	
72.7	**71.0**	**(1.7)**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature ($m)	30 Jun 12 ($m)			
The Boeing Company	Dec 01	50.4	**323.3**	Firm/Fixed	DEFPUR101	1
US Government (AT-P-LZY)	Oct 99	350.3	333.8	FMS	FMS	
US Government (AT-P-LDG)	Dec 06	206.8	**168.9**	FMS	FMS	
ELTA Systems Ltd	May 08	89.8	107.8	Fixed	ASDEFCON	

Raytheon	May 04	53.6	70.9	Fixed	ASDEFCON	1

Notes

1 Base Date dollars have not been provided for some contracts in this project. As the Prime Systems Integrator the Commonwealth has, as a risk management strategy, undertaken a process of incremental contracting, by way of both new contracts and changes to existing contracts, for work packages as they are defined. This strategy results in varying base dates for work packages contracted by each contract change. This strategy applies to The Boeing Company and Raytheon contracts, as a result expressing real price increases/decreases at a total prime contract level in base date dollars is not feasible. The Elta Systems Ltd contract and FMS however have been calculated at base date dollars.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
The Boeing Company	Various	Various	Aircraft & Pylon modification kits	
US Government (ATPLZY)	71	71	APG73 Radars	
US Government (ATPLDG)	66	73	Radar Warning Receivers	
ELTA Systems Ltd	Various	Various	ECM Jammer Pods	
Raytheon	3/0	3/3	Tactical Readiness Trainers and Tactical Operational Flight Trainers	

Major equipment received and quantities to 30 Jun 12

Phase 2 Hornet Aircrew Training System – **Final Materiel Release delivered.** Phase 2.1 Air Defence Upgrade – completed. Phase 2.2 Avionics Upgrade – completed. Phase 2.3 Electronic Warfare Upgrade – **Materiel Release 2** delivered.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Phase 2.1	N/A	N/A	N/A	N/A	
	Phase 2.2	Feb 02	Feb 02	Feb 02	0	
	Phase 2.3	Jan 07	Jan 07	Jan 07	0	
	HACTS	Sep 04	Sep 04	Sep 04	0	
Preliminary Design	Phase 2.1	N/A	N/A	N/A	N/A	
	Phase 2.2	Sep 02	Sep 02	Sep 02	0	
	Phase 2.3 (SDR)	Jan 07	Jan 07	Jan 07	0	
	HACTS	Jan 05	Jan 05	Jan 05	0	
Critical Design	Phase 2.1	N/A	N/A	N/A	N/A	
	Phase 2.2	Mar 03	Mar 03	Mar 03	0	
	Phase 2.3	Jun 07	Jun 07	Jun 07	0	
	HACTS	Mar 05	Mar 05	Mar 05	0	

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)	Notes
System Integration	Phase 2.1	N/A	N/A	N/A	N/A	
	Phase 2.2 (First Article Contract / Project acceptance)	Feb 05	Jan 05	Jan 05	(1)	1
	Phase 2.3 (System Integration Lab Test)	May 07	May 07	May 07	0	
	HACTS (Factory Acceptance Test)	May 06	May 06	May 06	0	

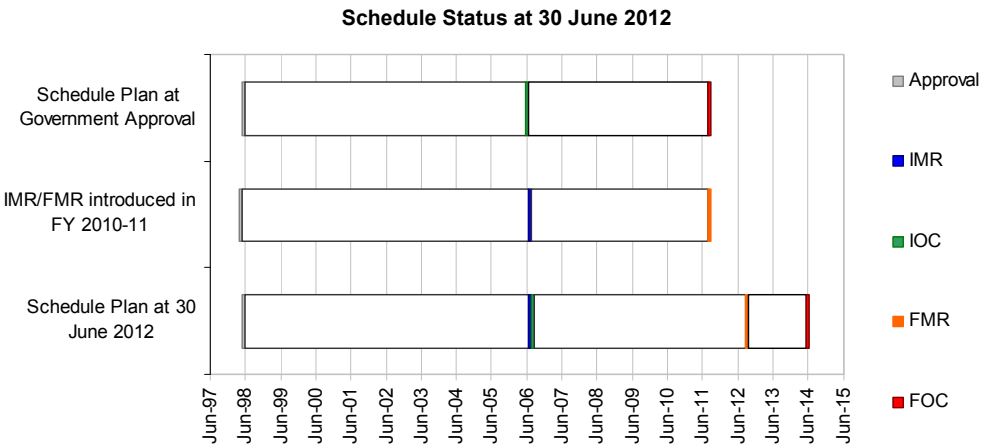
Acceptance	Phase 2.1	N/A	N/A	N/A	N/A	
	Phase 2.2 (Aircraft Modification DMO Acceptance – A&B model)	Nov 05	Nov 05	Nov 05	0	
	Phase 2.3 (Aircraft Verification and Validation)	Sep 08	Sep 08	Aug 08	(1)	1
	HACTS (Site Acceptance Test)	Jun 06	Jun 06	Jun 06	0	

Notes	
1	Modification of Validation and Verification aircraft completed earlier than anticipated.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

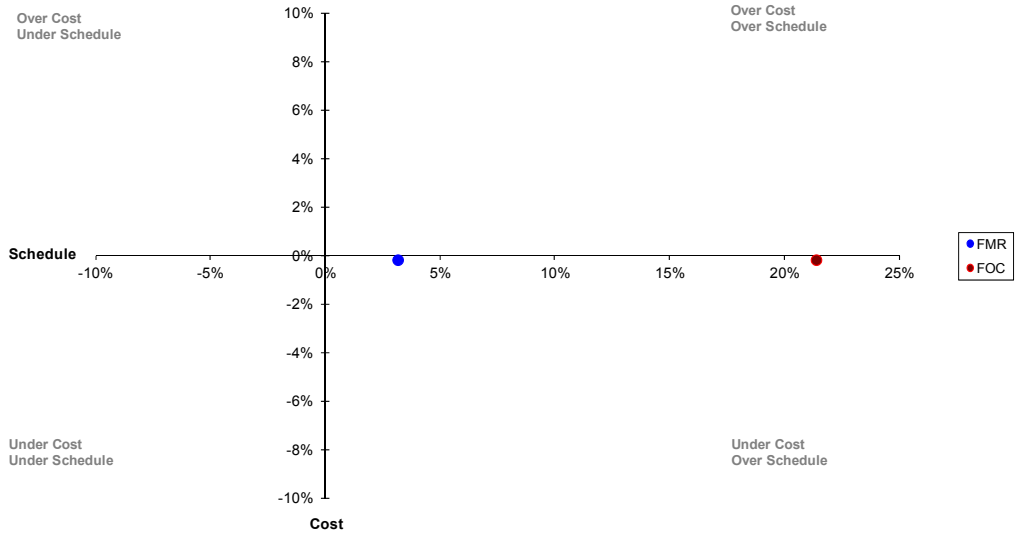
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)				
Phase 2.1 IMR	N/A	N/A	N/A	
Phase 2.2 IMR	N/A	Apr 07	N/A	
Phase 2.3 IMR	N/A	Dec 08	N/A	
HACTS IMR	N/A	Jul 06	N/A	
Materiel Release (MR) 2				
Phase 2.3 MR2	Aug 11	Aug 11	0	
Initial Operational Capability (IOC)				
Phase 2.1 IOC	N/A	N/A	N/A	
Phase 2.2 IOC	Apr 07	Apr 07	0	
Phase 2.3 IOC	Nov 09	**Nov 12**	**36**	IOC requires the completion of an Airworthiness Board for Supplemental Type Certification and Service Board Release by the RAAF.
HACTS IOC	Jun 06	Jul 06	1	Delays in the development and issue of Site Acceptance Report.
Final Materiel Release (FMR)				
Phase 2.1 FMR	N/A	N/A	N/A	
Phase 2.2 FMR	N/A	Dec 07	N/A	
Phase 2.3 FMR	Jun 11	**Sep 12**	**15**	**The delivery of jammer pods and associated ground support equipment have delayed achievement of the FMR.**
HACTS FMR	Aug 11	**Jan 12**	**5**	**Delivery of the advanced helmet mounted display has delayed achievement of the FMR.**
Final Operational Capability (FOC)				
Phase 2.1 FOC	N/A	N/A	N/A	
Phase 2.2 FOC	Dec 07	Dec 07	0	
Phase 2.3 FOC	Aug 11	**Nov 12**	**15**	FOC requires the completion of an Airworthiness Board for Supplemental Type Certification and Service Board Release by the RAAF.

HACTS FOC	Mar 07	**Jun 14**	**87**	The delivery of upgrades to the HACTS system to HUG 2.2 aircraft configuration **has** been completed. A further upgrade **to align HACTS configuration with fleet aircraft** will be progressed.



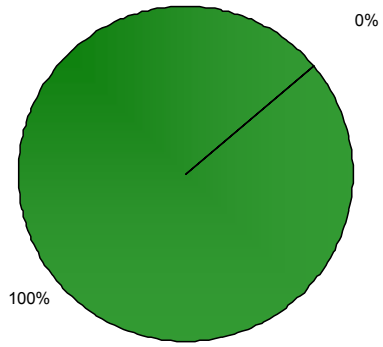
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	**Green:** **While the planned Phase 2.3 FMR milestone failed to meet the delivery schedule due to performance related anomalies identified during Operational Test and Evaluation, all major elements have been delivered for FMR, which is scheduled for September 2012.** **Amber:** N/A **Red:** N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)		
Description		Remedial Action
Phase 2.3	The delivery of F/A-18 Mission Computer (MC) Australian Unique software load number 8 (Austblock 8) is dependent on delivery of MC data from the US Navy, which is in turn dependent on the flight test program. There is a risk that delays in data delivery from the US Navy, flight testing or Austblock 8 development will delay FOC.	**Multiple** Flight Testing **activities** for the Electronic Warfare **suite** has been conducted and completed. No serious deficiencies were found that will delay the service release of Austblock 8. No additional builds will be required therefore, the bulk of the risk relates to the ability of the Australian Weapons System Support Flight (WSSF) to develop Austblock 8 and the associated testing, publications and training development requirements. Continued consultation with WSSF through Integrated Product Team meetings to work through issues is being conducted to minimise any delay. **This risk has been downgraded and is no longer considered a Major Project Risk.**
	The EL/L-8222 ECM pod requires routine servicing (as regularly as six months) and without in-service support arrangements in place, this servicing cannot be completed. There is a risk that because of the late contracting activities, there will be no EL/L-8222 In-service Support (ISS) in place by the FOC Milestone.	The development of a Contract Change Proposal to the Acquisition contract to procure Long Lead support equipment and spares has been completed and put in place. In addition, with stakeholder agreement the EL/L-8222 ISS contract will only cover Deeper Level Maintenance, with RAAF conducting Intermediate level maintenance, which has significantly reduced this risk. **This risk has been downgraded and is no longer considered a Major Project risk.**

	There is a risk that there will be a qualification issue (i.e. Electromagnetic Effect non-compliance) with the Phase B EL/L-8222 ECM Pods as initially delivered. This qualification may also delay production of Phase B ECM Pods and further delay FMR and/or FOC.	The Project Office will re-emphasis to Elta the importance of qualification-related Functional Performance Specification compliance during the Project Management Reviews and Weekly meetings to ensure Elta do not assume non compliances and waivers will be granted. **This risk has been downgraded and is no longer considered a Major Project risk.**
Emergent Risks (risk not previously identified but has emerged during 2011-12)		
Description		Remedial Action
There is a risk that the project scope does not match that of the initial government approval.		**Documentation was presented to Head Aerospace Systems Division (HASD) reconciling the scope as defined in the Materiel Acquisition Agreement. No further issues were raised and this risk has now been closed.** **This risk has been retired.**

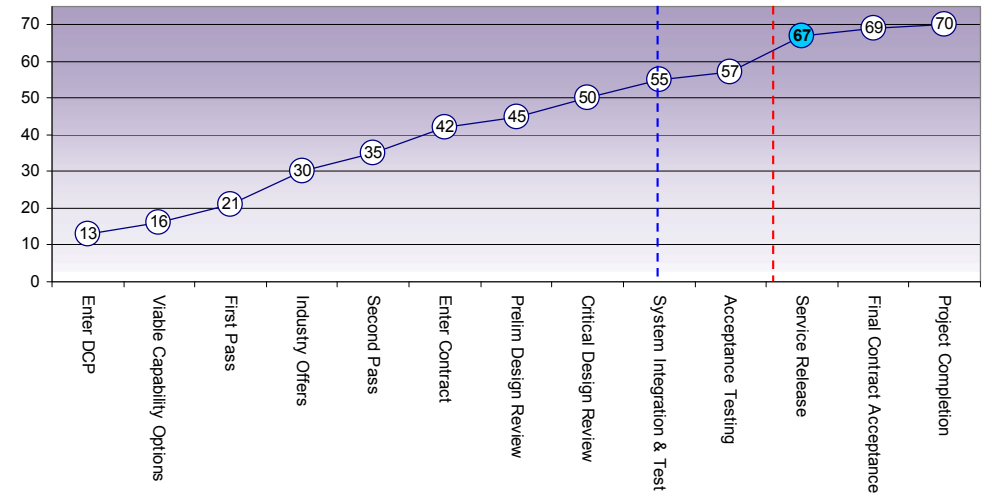
6.2 Major Project Issues

Description		Remedial Action
Phase 2.3	Final delivery of Weapon Station 6 adaptors for the Electronics Counter Measures Jammer Pod will not meet the FOC milestone.	**Weapon Station 6 adaptors were removed as a requirement for FOC Milestone during the Project Management Steering Group held in March 2011.** **This issue has been retired.**
HACTS	**There is a chance that HACTS capability will not be optimised and/or rectified leading to an impact on performance.**	**Procurement strategy has been developed and is currently in the process of approval.**

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	9	10	10	10	9	9	67
Service Release	Project Status	9	10	9	9	9	8	9	63
	Explanation	• **Schedule:** The project **has completed** acceptance testing **of** EL/L-8222 jammer **and deliveries are now in progress.** • **Costs:** Major acquisition contracts are finalised in line with iterative contracting strategy. In service support contracts are still in development. HACTS funding estimates for finalisation activities are undergoing refinement. • **Requirement: Operational Test and Evaluation is currently being undertaken and has yet to be completed.** • **Technical Understanding:** Support aspects are understood, however only partial capability in service. The US Navy is continuing to assist in the resolution of discrepancies discovered during Acceptance testing for HACTS. • **Technical Difficulty:** Several phases of the project undertook Prime Systems Integration functions that has increased the technical difficulty and risks associated with the project. The status of technical difficulty will increase **as** all sub-systems are **delivered.** • **Commercial: Due to the nature of the Materiel Acquisition Agreement, HUGPH2 has deliverables past the FMR/FOC milestones.**							



2010-11 DMO MPR Status - - - - 2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Integrated Product Teams: Integrated product teams for all project disciplines (engineering, logistics, commercial, test and evaluation, and display development) were established with members from all major stakeholders (Commonwealth, prime and sub contractors, US and Canadian Government representatives). **These** teams met formally on a regular basis and **with** significant issues **being** raised **with the** overarching management Integrated product team. As well as ensuring progress towards a common goal, the Teams enabled the implementation of many other project initiatives that relied on quick and honest communication between all parties.	Governance Resourcing
Joint Risk and Schedule Management: Through the integrated product teams a common risk and schedule management methodology was implemented for the entire project. Boeing, as the prime integrator, provided a vehicle to manage both risk and schedule in a common **framework**. Pro-active management of risks was encouraged and many mitigation strategies, particularly in respect to display development, were implemented to avoid schedule delays.	Governance Schedule Management
Proactive Contract Management: Due to the incremental contracting nature of the project, joint and proactive contract management was essential. Regular commercial integrated product teams provided an effective vehicle to manage the prime integration contract with Boeing and FMS cases with the US Government.	Contract Management

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	AVM Colin Thorne
Branch Head	AIRCDRE Axel Augustin
Project Director	GPCAPT Graham Edwards **(to Jan 12)** **GPCAPT Damien Keddie (Jan 12–current)**
Project Manager	WGCDR Scott Parry

Project Data Summary Sheet[242]

Project Name	**C-17 GLOBEMASTER III HEAVY AIRLIFTER**
Project Number	**AIR 8000 Phase 3**
Capability Type	New
Service	Royal Australian Air Force
Government 1st Pass Approval	Mar 06
Government 2nd Pass Approval	Mar 06
Total Approved Budget (Current)	**$1,844.4m**
2011-12 Budget	**$16.0m**
Project Stage	Service Release
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

This project is to provide the Australian Defence Force (ADF) with a global heavy airlift capability based upon four Boeing C-17 Globemaster III heavy lift aircraft. The project also includes the acquisition of associated logistics support provisions, role equipment, training devices and facilities required to completely attain the Heavy Airlift capability.

1.2 Current Status

Cost Performance

As at 30 June 2012, project AIR 8000 Phase 3 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

All four C-17 Globemaster aircraft have been delivered within budget.

Schedule Performance

All four C-17 Globemaster aircraft have been delivered, the first two of which were on schedule and the remaining two ahead of schedule. Associated support equipment is being delivered to schedule.

Final Materiel Release (FMR) was achieved on schedule in December 2011.

Final Operational Capability (FOC) **was achieved on schedule in December 2011.**

[242] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

Materiel Capability Performance

All four C-17 aircraft are in operational service and all remaining Heavy Air Lift capability elements are anticipated to be met. Delivery of in-country C-17 aircrew and maintenance training infrastructure achieved (January 2010) and full electronic warfare self-protection achieved (March 2010). Air Force declared FOC on schedule for this project in December 2011. Loadmaster training infrastructure on schedule for 2014 delivery.

1.3 Project Context

Project	Explanation
Background	The project received combined first and second pass Government approval in March 2006 to acquire up to four C-17 aircraft, complete with logistics support through the C-17 Globemaster Sustainment Partnership. Critical project approval considerations incorporated an acquisition method utilising a sole source to the Boeing Company, through the United States (US) Foreign Military Sales (FMS) process, to access pre-existing contracting arrangements. The aircraft are capable of providing a global Heavy Airlift Capability for the Australian Defence Force (ADF) covering the movement of military personnel and outsized cargo that cannot be transported by the Hercules aircraft. Previously, this capability had been provided through commercial arrangements.
Uniqueness	The aircraft acquired were Military Off-The-Shelf with no Australian unique modifications.
Major Challenges	The highest **remaining** risk for the project is to deliver **the Cargo Compartment** training device to meet Materiel Acquisition Agreement (MAA) delivery schedule. To date, no risks have been realised in this project.
Other Current Projects/Sub-Projects	**Air 8000 Phase 4 - Additional C-17 Aircraft. Shared Project Office resources to achieve outcomes for both projects.**

1.4 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Mar 06	Original Approved		1,864.4	
Jul 10	Price Indexation		124.0	1
Jun 12	Exchange Variation		**(144.0)**	
Jun 12	**Total Budget**		**1,844.4**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – US Government	(1,266.5)		
	Other Contract Payments / Internal Expenses	**(51.9)**		2
			(1,318.4)	
FY to Jun 12	Contract Expenditure – US Government	**(15.6)**		
	Other Contract Payments / Internal Expenses	**(2.2)**		**3**
			(17.8)	
Jun 12	**Total Expenditure**		**(1,336.2)**	
Jun 12	**Remaining Budget**		**508.2**	

Notes	
1	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $103.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $20.7m having been applied to the remaining life of the project.
2	Other expenditure comprises operating expenditure, contractors and other capital expenditure not attributable to the top 5 contracts and minor contract expenditure.
3	**Other expenditure comprises capital expenditure not attributable to the top 5 contracts ($2.1m for Support Equipment) Project Administration ($0.1m) and minor operating expenditure.**

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		2.8	FMS	**Variation of $2.8m is based on a Project Office assessment of higher than forecast disbursement activities associated with FMS Case AT-D-SEN. A Programming Variation Request to increase the FY 2011-12 Latest Plan was sought in June 2012 to accommodate this requirement. Remaining variations are either Support Equipment and/or Project Administration costs removed as achievement in FY 2011-12 and foreign exchange YTD loss with FMS payments processed in the month of June.**
			Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
		(0.5)	FOREX Variation	
		(0.5)	Commonwealth Delays	
16.0	**17.8**	**1.8**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
US Government	May 06	1,568.3	1,487.6	FMS	FMS	1

Notes	
1	Original contract value based on accelerated schedule with some scope items not included in initial version of FMS Case. Seven case amendments have been made to date to capture these residual scope items.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
US Government	4	4	C-17 Globemaster III Aircraft	

Major equipment received and quantities to 30 Jun 12
Four aircraft accepted. Maintenance and Aircrew Training Systems and other engineering and maintenance arrangements established.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	C-17 Globemaster III Aircraft		N/A	N/A	N/A	1
	Australian Visual Database		Apr 08	Apr 08	0	
	Virtual Cargo Load Model		Aug 07	Aug 07	0	
	Cargo Compartment Trainer		Mar 11	Mar 11	0	
Preliminary Design	C-17 Globemaster III Aircraft		N/A	N/A	N/A	1
	Weapon System Trainer Simulated Avionics Package		Apr 07	Apr 07	0	
	Australian Visual Database		Nov 08	Dec 08	1	
	Virtual Cargo Load Model		Aug 07	Aug 07	0	
	Cargo Compartment Trainer		Mar 11	Mar 11	0	
Critical Design	C-17 Globemaster III Aircraft		N/A	N/A	N/A	1
	Weapon System Trainer Simulated Avionics Package		Aug 07	Aug 07	0	
	Australian Visual Database		Nov 08	Apr 09	5	
	Virtual Cargo Load Model		Nov 07	Nov 07	0	
	Cargo Compartment Trainer		Apr 11	Apr 11	0	

Notes	
1	C-17 Globemaster III Aircraft design reviews not required as it is Military Off-The-Shelf i.e. Mature Design with no ADF unique changes.

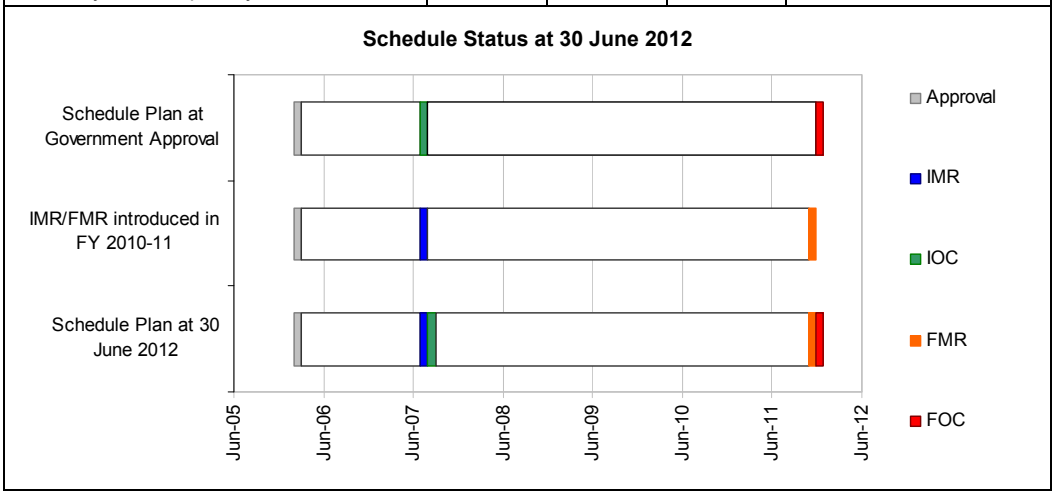
3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	C-17 Globemaster III Aircraft		N/A	N/A	N/A	
	Simulated Avionics		Jul 08	Jan 10	18	1
Acceptance	C-17 Globemaster III Aircraft A41-206		Nov 06	Nov 06	0	
	C-17 Globemaster III Aircraft A41-207		May 07	May 07	0	
	C-17 Globemaster III Aircraft A41-208		Feb 08	Dec 07	(3)	2
	C-17 Globemaster III Aircraft A41-209		Mar 08	Jan 08	(2)	2
	Australian Visual Database On Site Review		Oct 09	Oct 09	0	
	Weapon System Trainer		Dec 09	Nov 09	(1)	
	Virtual Cargo Load Model		Jul 08	Oct 08	3	
	Cargo Compartment Trainer and Facility commissioned		Dec 14	Dec 14	0	3

Notes	
1	The Australian C-17 simulator was to be the first fitted with simulated avionics. Simulated avionics would subsequently form the baseline configuration for all future C-17 simulators. The US Government encountered contractor development problems and the Australian C-17 simulator was fitted with aircraft component avionics. Simulated avionics is subsequently not part of the Australian C-17 simulator baseline. The Australian C-17 simulator was commissioned in November 2009 and conducted first training in January 2010 with Aircraft component avionics.
2	C-17 Globemaster III Aircraft Developmental Test & Evaluation (DT&E) not required as it is Military Off-The-Shelf i.e. Mature Design with no ADF unique changes. Aircraft A41-208 and A41-209 were completed early by the manufacturer (Boeing).
3	**CCT and facility is not required to achieve FOC.**

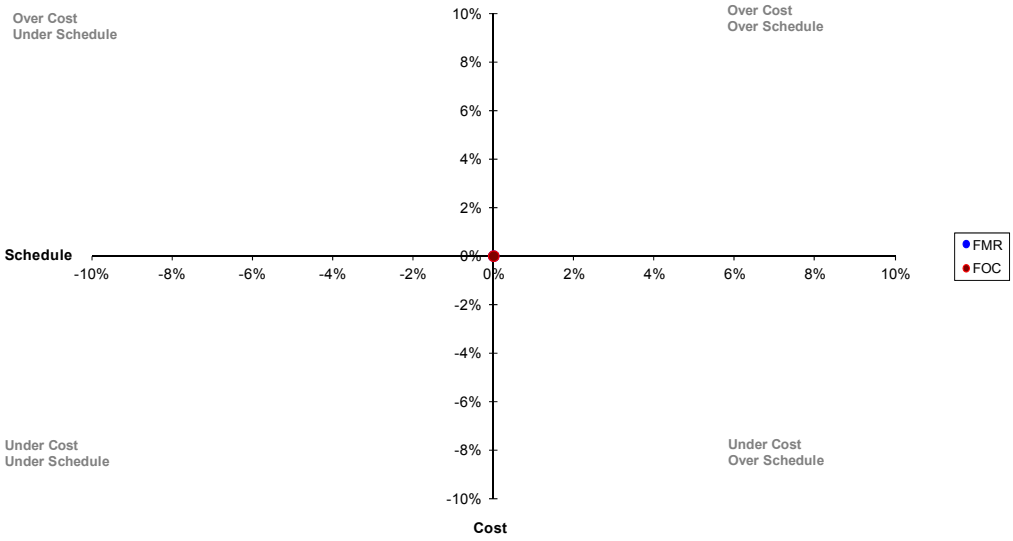
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Aug 07	N/A	
Initial Operational Capability (IOC)	Aug 07	Sep 07	1	Variance is minimal at approximately 10 days Nil operational impact.
Final Materiel Release (FMR) ▪ Heavy Airlift Capability	Dec 11	Dec 11	0	
Final Operational Capability (FOC) ▪ Heavy Airlift Capability	Dec 11	Dec 11	0	



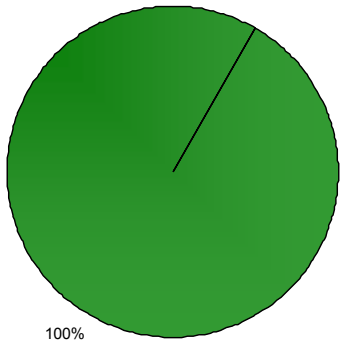
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	**Green:** The project is **currently** meeting capability **materiel** requirements, as **expressed in the Materiel Acquisition Agreement and in accordance with the requirements of the relevant Technical Regulatory Authorities.**
	Amber: N/A
	Red: N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Due to the complex nature of the CCT and building integration, and the additional requirements for new build CCTs, there is a risk that the CCT facility (provided by Defence Support Group [DSG]) will not be completed and available for required C-17 loadmaster training to meet MAA obligations.	This risk is being managed by obtaining and reviewing detailed planning and scheduling information, maintaining close liaison and regular meetings with Defence Support Group, **which** is responsible for delivering the Australian Cargo Compartment Trainer Facility.
There is a chance that the management and progress of the project will be affected by a lack of sufficient resources leading to an impact on performance, schedule, and supportability.	This risk is being managed by forecasting, closely managing and retaining resources required to perform the activities of the project.
Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
N/A	**N/A**

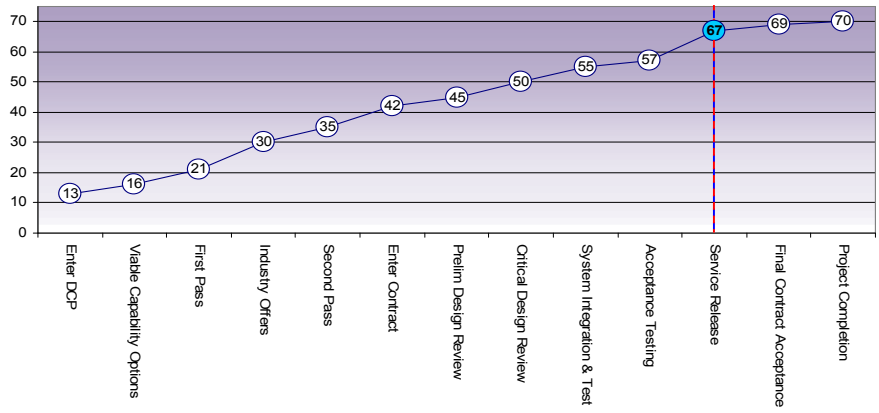
6.2 Major Project Issues

Description	Remedial Action
N/A	N/A

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	10	9	10	10	10	9	9	67
Service Release	Project Status	10	9	10	10	10	9	9	67
	Explanation	The project maturity score has not changed from the **2010-11 MPR**. The project has delivered all four C-17 Globemaster aircraft with the permanent support facilities and training systems delivered by December 2011 (with the exception of the Cargo Compartment Trainer).							



2010-11 DMO MPR Status - - - -	2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Considerable acceleration of the standard acquisition cycle is possible when the major supplies being procured are off-the-shelf production items. However, acceleration of establishment of support systems may be more difficult and should attract early management focus.	Military Off-The-Shelf Equipment

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	AVM Colin Thorne
Branch Head	AIRCDRE Rob Lawson
Project Director	**GPCAPT** Warren Bishop **(Jan 12–current)**
Project Manager	WGCDR Warren Bishop **(to Dec 11)** **WGCDR Gary Dunne (Jan 12–current)**

Project Data Summary Sheet[243]

Project Name	**AIR TO AIR REFUELLING CAPABILITY**
Project Number	**AIR 5402**
Capability Type	New
Service	Royal Australian Air Force
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	May 03
Total Approved Budget (Current)	**$1,795.7m**
2011-12 Budget	**$149.8m**
Project Stage	Acceptance Testing
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

This project will provide the Australian Defence Force (ADF) with five new generation Airbus A330 Multi Role Tanker Transport aircraft (MRTT), to be known as the KC-30A in Royal Australian Air Force (RAAF) service. The MRTT will be equipped with both hose & drogue and boom refuelling systems capable of in-flight refuelling of current and future aircraft, including F/A-18 Classic and Super Hornets, Hawk Lead-In Fighter, Wedgetail Airborne Early Warning and Control, C-17 Globemaster III, and Joint Strike Fighter (JSF). The MRTT will also provide significant Air Logistics Services capability for carriage of up to 270 passengers and cargo. The acquisition also establishes the infrastructure necessary to deliver services including engineering, maintenance, spares management, technical data, software and training support for the new fleet.

1.2 Current Status

On 15 October 2010, the Minister for Defence Materiel announced this project is a Project of Concern.

Cost Performance

As at 30 June 2012, project AIR 5402 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

[243] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

Schedule Performance

Concurrent with acceptance of the first aircraft, DMO and Airbus Military agreed the principles of a commercial settlement which, amongst other things, includes a plan for remediation of all non-conformances, a program of improvements to the Aerial Refuelling Boom System **and a re-baseline of the Contract Milestone Dates. The commercial settlement was signed concurrently with acceptance of the third aircraft (A39-004) in November 2011.**

The prototype aircraft (MRTT#1) was accepted on 29 December 2011 following refurbishment to remove the extensive suite of flight test instrumentation, repair structural damage, install retrofit modifications, and to complete the interior fitout. In accordance with the commercial settlement, MRTT#1 was handed-back to Airbus Military for use during 2012 for testing of modifications to the military avionics and boom refuelling systems. Commencement of qualification flight testing has been delayed due to additional inspections and repairs to MRTT#1 to correct quality and maintenance deficiencies. Flight testing is expected to resume in October 2012.

Initial Acceptance of the Simulation Devices and Training Facility was achieved on 28 December 2011.

Conversion of the fifth and final commercial A330 at the Australian Conversion Centre was completed on schedule in June 2012, and the aircraft returned to Madrid in July 2012 to be used as a receiver aircraft for boom testing and for painting prior to acceptance toward the end of 2012.

Materiel Capability Performance

To meet Defence strategic goals, the DMO has worked closely with Airbus Military to ensure that the initial configuration at acceptance provides essential capability for Air Logistics Support (passengers and cargo) and pods (hose and drogue) air to air refuelling. A suitable framework to enable contractual acceptance of aircraft with non-critical non-conformances has been established. This framework also ensures that full compliance will be achieved by Final Materiel Release (FMR) in order to achieve Final Operational Capability (FOC). All issues identified to date have suitable processes and procedures in place to reduce the operational impact. The non-conformances will be carefully managed to meet minimum requirements of Initial Materiel Release (IMR) and Initial Operational Capability (IOC).

Non-conformances to the contracted capability include, radio **management, military avionics, mission planning and boom refuelling systems.**

Although the aircraft has been certified **(with limitations)** for boom refuelling of small and large aircraft, an agreement has also been reached on improvements to the Aerial Refuelling Boom System to provide an effective operational capability. While delivery of an operational boom refuelling system has been significantly delayed, the capability impact is not considered significant provided FOC can be achieved prior to the JSF aircraft entering RAAF service.

The United States (US) has also provided approval for the Electronic Warfare Self Protection system to be installed and tested (safety of flight and airworthiness only) in Australia, which will be completed by FOC.

1.3 Project Context

Project	Explanation
Background	Government gave the equivalent of second pass approval in May 2003 for a new generation air-to-air refuelling capability. An open Request for Tender was released in June 2003 for both the Acquisition and Through Life Support Contracts. In April 2004, Government announced that the Military Transport Aircraft Division of the European Aeronautic and Space Company Construcciones Aeronauticas S.A. (EADS CASA), teamed with Qantas Defence Services, had been selected as the preferred tenderer for the supply of five Airbus A330 MRTT aircraft and their associated support. The Acquisition Contract was signed with Spanish company EADS CASA in December 2004. The Through Life Support Contract was signed with Qantas Airways Limited in February 2007. In April 2009, the Military Transport Aircraft Division of EADS was amalgamated with the Airbus Military Division, and commenced trading as Airbus Military. The A330 MRTT is based on the Airbus A330-200 medium/long-range twin aisle commercial aircraft. The first (prototype) aircraft is modified and tested by Airbus Military in Madrid, Spain. The remaining four aircraft are modified by Qantas, under subcontract to Airbus Military, at the Australian Conversion Centre, located at Brisbane Airport, Australia. A Contract Change Proposal (CCP) was signed in March 2006 for the procurement of a Full Flight Mission Simulator, Integrated Procedures Trainer and a Simulator Training Facility. A CCP was signed in December 2006 for changes to the cockpit layout to accommodate redesign of the refuelling operator console and associated changes to the cockpit access door and forward lavatory. Implementation of these changes on the first aircraft required the conversion and test activities to be divided into two phases: • Phase 1 involves the structural modification of the aircraft, including installation of boom and pods for civil certification. • Phase 2 involves the installation of the military systems, installation of the refuelling operator console and completion of cabin modifications for full military certification and qualification of the modified aircraft.
Uniqueness	Air 5402 is the lead customer of the A330 MRTT platform, including the lead customer for the Airbus Military developed Aerial Refuelling Boom System. Whilst Airbus Military has previously developed and delivered underwing pod equipped A310 MRTT aircraft to the German and Canadian Air Forces, the A330 MRTT is a significantly more complex developmental effort to design, build and test the first of type, highly integrated military mission and refuelling systems. In parallel, Airbus Military is required to develop the publications, training devices and training material to support introductory training of aircrew and maintenance staff and for transition to the Through Life Support Contractors for ongoing support of the new tanker capability.
Major Challenges	Airbus Military's ability to meet the **rebaselined** schedule milestones **for delivery of the full contracted capability** continues to be the greatest challenge. Delays experienced with the aircraft development and test **are continuing to impact** the associated design, development and verification **of the Support System**. **Principal** challenges expected during the next reporting period include: • **The timely completion of testing and DMO acceptance of the documentation for qualification (contract compliance) of changes to the military avionics systems, Mission Planning System, and improvements to the Aerial Refuelling Boom System.** • **Support to introduction into service and achievement of Initial Materiel Release and Initial Operational Capability.** • **Planning and implementation of a program to incorporate modifications to the military avionics and boom refuelling systems to in-service aircraft.**

Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
May 03	Original Approved		2,076.6	
Jun 04	Real Variation – Budgetary Adjustment	(149.4)		1
Aug 04	Real Variation – Budgetary Adjustment	(1.2)		2
Aug 05	Real Variation – Budgetary Adjustment	(3.0)		3
Nov 05	Real Variation – Transfer	(135.5)		4
			(289.1)	
Jul 10	Price Indexation		484.1	5
Jun 12	Exchange Variation		**(475.9)**	
Jun 12	**Total Budget**		**1,795.7**	
	Project Expenditure			
Prior to Jul11	Contract Expenditure – Airbus Military	**(1,269.2)**		
	Other Contract Payments / Internal Expenses	**(58.5)**		6
			(1,327.7)	
FY to Jun 12	Contract Expenditure – Airbus Military	**(107.9)**		
	Other Contract Payments / Internal Expenses	**(30.3)**		7
			(138.2)	
Jun 12	**Total Expenditure**		**(1,465.9)**	
Jun 12	**Remaining Budget**		**329.8**	

Notes	
1	Defence Capability direction re currency mix at approval and Government decisions.
2	Administrative Savings harvest.
3	Skilling Australia's Defence Industry harvest.
4	Transfer to DSG for delivery of MRTT infrastructure at RAAF Amberley and at other RAAF bases.
5	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $473.9m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $10.2m having been applied to the remaining life of the project.
6	Other expenditure comprises: operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned prime contract and minor contract expenditure. The major component of this amount **is** for Tanker Hire costs associated with the delay to the program.
7	Other expenditure comprises: operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned prime contract and minor contract

	expenditure. **This** amount includes **reimbursement to Air Force of tanker and air logistics support costs associated with delay to the program of $7.7m, $4.6m for an Engine Build Up Kit, $1.1m for engineering services, $1.1m** for travel, and **$3.9m** for training and related travel **and other miscellaneous project costs**.

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**Closure of boom design review milestones, spares deliveries and reimbursement of spares and support & test equipment freight costs were not completed as planned. An increased demand from Air Force for tanker hire and ALS support and expedited procurement of LAIRCM equipment brought forward expenditure. Some expenditure programmed is not required, particularly in the area of aircrew training.**
		(17.0)	Overseas Industry	
			Local Industry	
		8.7	Brought Forward	
		(3.3)	Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
149.8	**138.2**	**(11.6)**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
Airbus Military (formerly EADS CASA)	Dec 04	1,413.4	**1,615.4**	Variable	ASDEFCON	

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
Airbus Military (formerly EADS CASA)	5	5	Provision of a new generation air to air refuelling capability comprising five A330 MRTT aircraft and associated supplies and support.	

Major equipment received and quantities to 30 Jun 12

Acceptance of the third aircraft (A39-004) achieved on 7 November 2011. Acceptance of fourth aircraft (MRTT#1) achieved on 29 December 2011 but will be retained in Madrid under Airbus Military care, custody and control during 2012 to be used for testing of modifications to the military avionics and boom refuelling systems.

Initial Acceptance of the Simulation Devices (Full Mission Simulator, Part Task Trainer and Integrated Procedures Trainer) and Facility was achieved on 28 December 2011.

Acceptance of **additional** deliveries of spares and support and test equipment **were achieved during the reporting period.**

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements /Design	MRTT Aircraft	Feb 05	Feb 05	Mar 05	1	
System Requirements	Simulation Devices	May 06	May 06	Oct 06	5	
Preliminary Design	MRTT Aircraft	Jun 05	Jun 05	Jun 05	0	
	Simulation Devices	Sep 06	Sep 06	Jun 07	9	
	Simulation Devices Facility	Sep 06	May 07	Jul 07	10	
Critical Design	MRTT Aircraft	Feb 06	Mar 06	Jun 06	4	1
	Simulation Devices	Mar 07	Jan 08	Jan 09	22	2
	Simulation Devices Facility	Apr 07	Nov 07	Jan 09	21	3
	Aerial Refuelling Boom System	Sep 11	Sep 11	**Dec** 11	**3**	4
Final Design	MRTT Aircraft	Sep 06	Sep 06	Jul 07	10	1
	Aerial Refuelling Boom System	Dec 11	Dec 11	**Jul 12**	**7**	4

Notes	
1	The MRTT Aircraft Critical Design Review (CDR) was conducted over a series of meetings from February to May 2006. Although design for the majority of the aircraft systems had been satisfactorily completed, the design for key elements of the aircraft mission system was not yet mature. "Practical Completion" of the CDR Milestone was achieved in June 2006; with a follow-on milestone (designated as the Final Design Review (FDR). Concurrently, evaluations of the new Remote Aerial Refuelling Operator console identified the need for changes to the cockpit layout. These changes were agreed as part of the CDR close-out and required a change to the conversion and test process, which was split into two phases: Phase 1 for structural conversion and civil certification, and Phase 2 for installation of the military avionics and military certification. Closure of the residual activities to achieve the FDR proved problematic. These were progressively completed over the following 12 months.
2	Delays to completion of the MRTT Aircraft design process had a knock-on impact to completion of the Simulation Devices CDR.
3	Completion of the CDR for the Simulation Devices Facility was delayed due to redesign to accommodate increased security requirements.
4	Additional design review milestones have been added for development of improvements to the Aerial Refuelling Boom System. **As with previous design reviews, closure of the contract milestone has lagged conduct of the design review activity in order to complete approval of documentation in accordance with the milestone exit criteria.**

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	MRTT Aircraft	Aug 08	Dec 08	May 11	33	1
	Simulation Devices	Feb 09	Dec 09	Apr 11	26	2
Acceptance	MRTT Aircraft – Milestone 18 - Acceptance of First Aircraft	Dec 08	Oct 10	Jun 11	29	1
	Simulation Devices and Simulation Devices Facility	May 09	Dec 11	Dec 11	31	2
	Full Mission Simulator Final Accreditation	Feb 10	**May 13**	**Aug 13**	**42**	2
	Aerial Refuelling Boom System	Dec 12	Dec 12	**Jul 13**	**7**	3

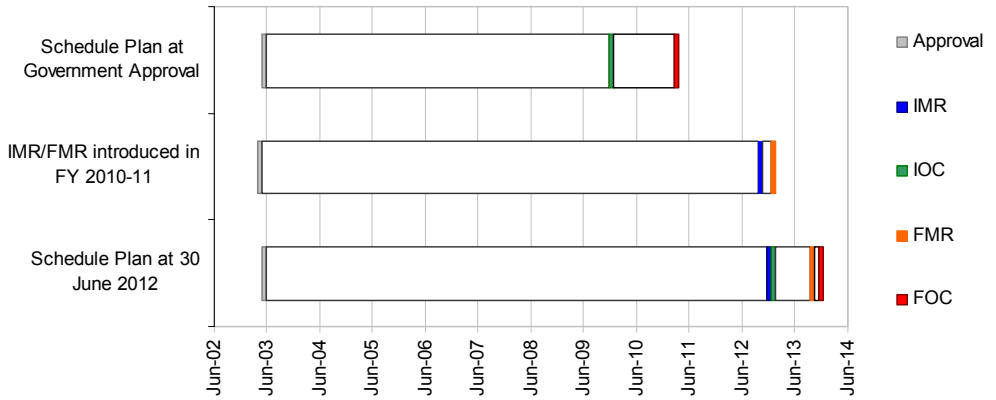
	Contract Final Acceptance	Feb 11	**May 13**	**Nov 13**	**33**	4

Notes	
1	Originally planned as a single-phase activity, the system integration test program for the first-of-type A330 MRTT was split into two phases to accommodate changes to the Remote Aerial Refuelling Operator console. The first phase, for civil certification of the modified aircraft, was successfully completed in February 2008. The second phase, for military certification and qualification of the modified aircraft, commenced end of December 2008, approximately six months late due to the combination of delays to the first and second conversion phases. Unexpected and continued delays experienced in the development test phase during 2009 delayed commencement of the formal certification ground and flight testing program. A Technical Certificate for certification of the A330 MRTT was issued by the Spanish military certification authority Instituto Nacional de Tecnica Aerospacial (INTA) in October 2010 and reissued in April 2011 to certify changes introduced following a serious in-flight incident and loss of the boom in January 2011 during a training flight with Portuguese F-16 fighters. Qualification testing was completed in December 2010; although two additional flights were necessary, and completed in May 2011, to complete test evidence necessary to demonstrate compliance with the contract specification. Acceptance Test & Evaluation of the first MRTT Aircraft (MRTT#3) was conducted during May 2011 as part of the Customer Acceptance Process following completion of all system integration testing and aircraft preparation for delivery.
2	Delays to completion of the MRTT Aircraft test process has a knock-on impact to completion of testing of the Simulation Devices as the data required for its final accreditation is dependent on a targeted flight test phase conducted at the end of the formal test program. The Simulation Devices will be introduced in phased manner to recover schedule due to delays in the aircraft test program and enable initial acceptance to be completed by end-2011 and training to commence on the devices in early-2012. Final accreditation has been delayed due to the need for development and testing of further improvements to meet full capability and flow-through of changes to the Simulation Devices.
3	New milestone for acceptance of improvements to the Aerial Refuelling Boom System. **Unplanned work for remediation of aircraft quality issues identified at the time and subsequent to the Acceptance of MRTT#1 has impacted the boom improvement flight test program.**
4	Rectification of all non-conformances at initial acceptance and provision of service bulletins for upgrade of delivered aircraft is required to be completed by Contract Final Acceptance. **Delays to completion of the Mission Planning System, improvements to the boom and refurbishment and re-delivery of MRTT#1 are expected to further delay achievement of Contract Final Acceptance.**

3.3 Progress Toward Materiel Release and Operational Capability Milestones

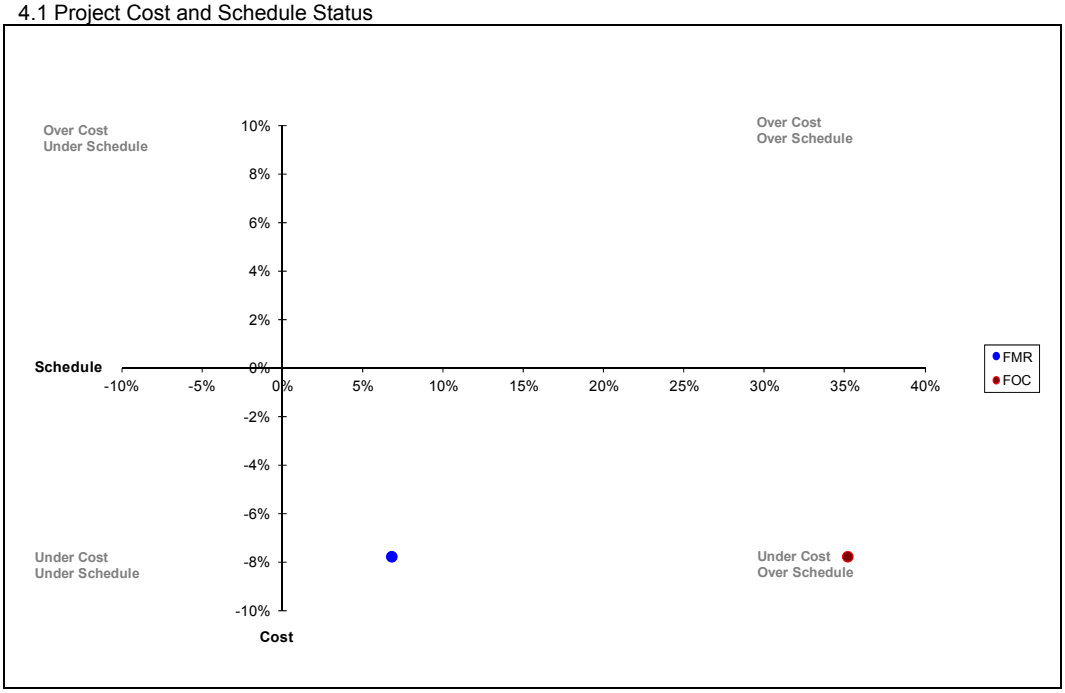
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Oct 12	**Dec 12**	**2**	DMO milestone for delivery and acceptance of two aircraft, training and Australian military certification and initial service release **in support of an Initial Operational Capability.**
Initial Operational Capability (IOC)	Dec 09	Dec 12	36	**IOC requires demonstration of an effective capability for Air Logistics Services (passengers and cargo) and pods (hose and drogue) air to air refuelling. There have been** delays to the development, certification and qualification of the first-of-type aircraft. A further delay has been as a result of refinement of planning and identification of additional training and operational test and evaluation requirements. Delays to Acceptance of the first aircraft have required alternative arrangements for provision of aerial refuelling and air logistics services to meet Air Force operational and training commitments.
Final Materiel Release (FMR)	Feb 13	**Oct 13**	**8**	DMO milestone for delivery and acceptance of five aircraft and mature support system, including training devices, training materials, publications, spares and support and test equipment.
Final Operational Capability (FOC)	Mar 11	Dec 13	33	Schedule recovery is not expected through to completion of conversion of the **fifth** aircraft in Australia due to the increased scope and complexity of the conversion. Further improvements to the military avionics and boom refuelling systems are necessary to achieve full capability and are planned to be completed by end 2012. Delays will impact the workup and achievement of the expected operational readiness for FOC.

Schedule Status at 30 June 2012



Section 4 – Project Cost and Schedule Status

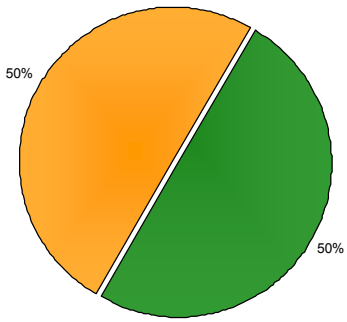
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Green:

Introduction into Service of the KC-30A capability has been impacted by first-of-type performance and reliability problems with the refuelling pods and delays to implementation of the interim mission planning systems. Notwithstanding, the project is forecasting that materiel capability requirements for IMR will be met including but not limited to:

- Safely and effectively refuelling aircraft equipped with pod hose and drogue compatible refuelling systems;
- Ability to accept military and civil pallets and bulk cargo;
- Suitable military and civil communication and navigation suites; and
- Aircraft and through life support system capable of sustaining **initial** prescribed annual rate of effort.

	Amber: There is risk to meeting all materiel capability requirements for FOC due to acceptance of aircraft in an initial configuration and the risk of successful remediation of all non-conformances and improvements to the Aerial Refuelling Boom System. **The capability impact and need for further remediation will be assessed as an outcome of qualification testing and review of compliance evidence in support of contractual acceptance of milestones for remediation of all non-conformances and improvements to the ARBS.**
	Red: N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Refuelling system technical, integration or performance envelope issues impacting **achievement of Milestone 26a (redelivery of the last MRTT aircraft).**	Actively monitor system design, development and testing and enforce performance goals. At the acceptance of the first aircraft non-compliances **were** documented, **with r**ectification action and schedule agreed. Project **continues to** closely monitor contractor progress for the development, testing and delivery of the rectifications. Select Resident Project Team positions in Madrid have been extended to maintain close oversight of contractor activities, and also participation in design reviews, testing, and acceptance activities. USAF support is being maintained to provide the CoA with boom refuelling expert knowledge and test support.
Final Design and implementation of Human Machine Interface of systems is not **fully effective** impacting **efficient and safe operation** of the aircraft.	Continue to contribute to the Human Engineering Program to provide timely feedback. Actively manage and control Human Machine Interface (HMI) development with Subject Matter Experts to ensure contracted requirements are met. HMI deficiencies at initial acceptance **were** identified and a remediation plan agreed. Defence Science and Technology Organisation subject matter expert has re-engaged with the project to provide on-going HMI expertise support.
Lack of operational **testing and engineering** experience by key stakeholders impacting the design and certification of the final product.	**Secure** expert support from RAAF and USAF for review of design **and testing**. Highlight possible short comings to authorities and provide expert oversight of certification process. Involvement of USAF boomers in certification and qualification activities. Airbus Military engagement of additional boom refuelling expertise.
Final delivery of a sub-optimal Mission Planning System (MPS) impacting final capability.	Clarification and agreement on a finite set of requirements with Airbus Military. Also liaise with other customers to maintain a common set of requirements across the customer base to assist with maintaining a common configuration. MPS non-compliances for aircraft acceptance have been documented and agreed with a remediation plan for the final capability. The impact of delays to the delivery of the final MPS capability has been mitigated by the availability of an

	interim MPS suite of applications and other workarounds. The project continues to closely monitor contractor activities for the development, testing and acceptance of the final MPS capability.
Unforeseen hardware or software issues encountered in the fuel system components developed by sub-contractors impacting schedule and/or performance.	Monitor development at reviews and ensure Airbus Military enforces contractual specifications. Ensure Airbus Military has a fallback plan to deliver a minimum capability whilst the full requirements are being met in the longer term. Fuel system non-compliances at interim acceptance of the first aircraft have been identified and a rectification plan agreed. **This risk has been retired.**
Unavailability of Simulation Subject Matter Experts for acceptance testing impacting acceptance of the Simulation Devices.	Coordinate requirements with the testing working group, identify solutions and provide training as necessary. RAAF flight test and USAF support is also available if required. This risk is now assessed as **high.**
In-service technical issues will complicate rectification of acquisition non-compliances due to new problems being identified.	The In-service Through Life Support organisations are monitoring technical problems through the use of defect reports. These defect reports will be provided to the project office. Airbus Military to provide a holistic consideration of the system problems and ensure acquisition design changes are aware of any impacts. A combined acquisition and TLS Configuration Control Board will be operated until Australian Military Type Certification and Service Release is granted. Project Management Reviews with the contractor under the acquisition program will consider this issue and ensure coordination over both the acquisition and TLS programs.
The final boom system delivered with the last MRTT aircraft may not provide an operationally acceptable capability.	The USAF is recognised as the worlds expert for boom testing and operations, and through a FMS case separate commercial arrangements, the USAF has provided support to the project office to advise on boom specification requirements and participate in testing. The boom 'end-state' specification and boom development program has been agreed with Airbus Military and is contracted as part of a contract change. The USAF will continue to provide support to the project office during future design reviews and flight testing. **This risk has been retired.**
Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
Delay in the achievement of Australian Military Type Certification (AMTC) and Service Release (SR).	**Monitor progress of Operational Test and Evaluation objectives achievement required to support issue of an Australian Military Type Certification (AMTC) and Service Release (SR). Liaise closely with the ADF airworthiness authority secretariat to understand Airworthiness Board requirements and schedule, and with Airbus Military to understand progress on rectification of non-compliances.**
Delays in the rectification of Contractual Non – Conformances.	**Actively monitor Airbus Military issue of Service Bulletins and completion of outstanding obligations that were agreed as part of each aircraft acceptance process and documented in accordance with the contract.**

Delays in the development of Operational Airworthiness assessments.	**Review and revise Operational Airworthiness strategy and procedures as necessary to ensure efficiency. Workshop suitable solutions with subject matter experts providing recommendations to the Operational Airworthiness Authority Representative to ensure requirements and schedule are understood and can be achieved.**

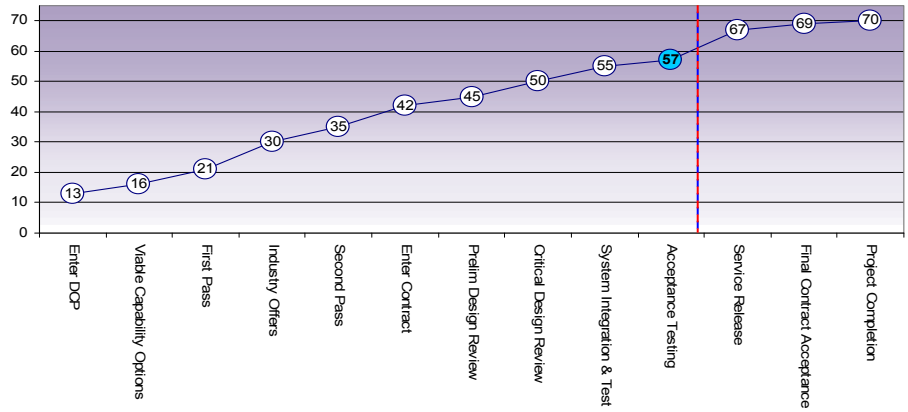
6.2 Major Project Issues

Description	Remedial Action
Human Machine Interface (HMI) Program.	The HMI program required Airbus Military to complete key development and test actions with Defence and the Spanish military certification authority, Instituto Nacional De Tecnica Aerospacial (INTA). Airbus Military conducted workshops with Defence to complete the Cockpit Acceptance test procedures and in parallel worked with INTA, to resolve the HMI issues associated with the Flight Warning System (FWS) as identified in the INTA HMI report. The FWS was certified by INTA during October 2010 and an updated certification was provided during April 2011. The FWS will be monitored during the remainder of the acquisition test program and during RAAF in-service operations and Operational Test and Evaluation.
Acceptance of the first of type A330-MRTT to meet Defence strategic requirements.	Defence has worked closely with Airbus Military to ensure the delivery and acceptance of two A330-MRTT Aircraft and associated logistics support by the end of June 2011. Defence is willing to accept the aircraft with capability deficiencies in non-essential systems to achieve this schedule. A framework has been established to manage the delivery of any outstanding capability by FOC. In addition, Defence and Airbus Military have established an Acceptance Working Group to ensure the acceptance process is well understood by both parties to reduce the risk of unexpected issues delaying the acceptance of key project elements. **This issue has been retired.**
Hardware and software of major refuelling components are still in development by the subcontractor.	Airbus Military is providing time in the test program to allow the subcontractor to introduce the required upgrades in stages. There is also senior management commitment from both Airbus Military and the sub-contractor to meet their contractual obligations. **This issue has been retired.**
Difficulty in achieving contracted schedule.	Continue to contribute to maintaining a current and robust joint project schedule and foster commitment by both parties to it. Conduct a detailed schedule analysis at each Project Management Review. Commitment by both parties for open and honest communication for the joint management of schedule risks.
Maturity of Mission Planning System.	Detailed sub-system specification has been developed and agreed. System performance at initial acceptance has been tested and shortfalls documented and agreed. An interim MPS solution, with workarounds for shortfalls, has been agreed and implemented. Further development of the MPS will be undertaken under a more robust systems engineering approach.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	8	8	8	8	9	8	8	57
Acceptance Testing	Project Status	9	7	9	9	9	8	9	60
	Explanation	The project **has** completed acceptance of **four** aircraft in a configuration able to support the achievement of an Initial Operational Capability. • **Schedule:** Following acceptance of the **four** aircraft, the project is now confident of achievement of an In-Service Date **(IMR as defined in accordance with the IMR milestone at section 3.3 of this PDSS)** by the forecast date. • **Cost:** Costs are within the approved Budget with remaining contingency commensurate with residual risks. • **Requirements:** The project requirements have been tested and plans for rectification of non-compliances at initial aircraft acceptance have been agreed. • **Technical Understanding:** Air Force is fully cognisant of the delivered capability and publications for operation and maintenance of the KC-30A tanker capability. • **Operations and Support:** The Through Life Support Contract is operative and the project is transitioning the KC-30A weapon system to Air Force.							



2010-11 DMO MPR Status - - - -	2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
The development and introduction into service of a first-of-type military (aircraft) mission and support system is always harder than it first appears. At contract signature the project appeared a reasonably low risk venture. However, over the course of the project, it became apparent to both the DMO and the contractor that the integration of the fuel delivery systems and military systems on a commercial aircraft introduced many challenges including: software integration issues, underestimation of developmental and certification testing schedule. As a result, a higher effort for a greater period of time was required by the DMO to support the program.	First of Type Equipment
Technical (design) maturity assessment: a tender definition activity was undertaken following selection of the preferred supplier and prior to contract negotiations. However, due to time constraints and the breadth of review activities, it was not possible to conduct a comprehensive technical review and maturity assessment. As a consequence, an aggressive system design schedule was agreed that subsequently proved difficult to achieve due to lower design maturity - and hence higher development effort - on some systems. The additional development effort was accommodated under the change to a two-phased conversion and test process. In hindsight, once it became apparent that Australia was the lead customer for the A330 MRTT, a more robust design maturity assessment should have been undertaken under a funded design development process prior to contract award.	First of Type Equipment Schedule Management
Whilst this project preceded improvements in the capability definition documents (Operational Concept Document, Function and Performance Specification and Test Concept Description), the intent of these documents was included in tender documentation and refined during contract negotiation for inclusion in the Acquisition Contract. The Contractor's internal requirements management process did not adequately support a robust process for customer clarification of the operational intent leading to protracted development and rework. There is a need to ensure that a robust process exists to achieve a common understanding of derived requirements and operational intent, and that it is agreed in the early stages of the project life-cycle.	Requirements Management

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	AVM Colin Thorne
Branch Head	AIRCDRE Robert Lawson
Project Director	Mr Ewan Ward
Project Manager	Mr Todd Russell **(to Dec 11)** **Mr Cameron Stewart (Feb 12–current)**

Project Data Summary Sheet[244]

Project Name	**GUIDED MISSILE FRIGATE UPGRADE IMPLEMENTATION**
Project Number	**SEA 1390 Phase 2.1**
Capability Type	Upgrade
Service	Royal Australian Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Jun 99
Total Approved Budget (Current)	**$1,449.6m**
2011-12 Budget	**$8.9m**
Project Stage	Final Contract Acceptance
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

This project seeks to regain a comparative regional maritime capability by upgrading four (originally six) *Adelaide* Class FFGs, and to ensure that they remain effective and supportable until their removal from service between 2015 and 2021. Royal Australian Navy (RAN) FFGs are a derivative of the United States (US) Navy *Oliver Hazard Perry* FFG-7 class Guided Missile Frigates. Each FFG is receiving an improved Anti-Ship Missile Defence (ASMD) system; an On Board Training System; an Electronic Support System; an upgraded Underwater Warfare System, upgraded diesel generators and other ship systems. The upgrade project is also establishing a shore-based Operator and Team Trainer system and a Warfare System Support Centre (WSSC).

1.2 Current Status

Cost Performance

As at 30 June 2012, project SEA 1390 Phase 2.1 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

[244] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

Schedule Performance

In June 2006 a Deed of Settlement and Release was agreed between the Commonwealth and the Prime Contractor (Thales Australia Ltd) that amended the FFG Upgrade Contract reducing the scope of the contract from six to four upgraded FFGs (in line with the Government's decision in November 2003 to remove two ships from service prior to upgrade) and re-align the master schedule to account for significant delay to the original schedule. A **subsequent** Contract Close Out Deed was executed in June 2010 that specified **Thales Australia's** remaining obligations under the Contract to be performed on the terms of the Contract by 28 February 2011. **Thales Australia did meet all of its final obligations as agreed by February 2011 and** the FFG Upgrade Prime Contract was formally completed 2 March 2011.

On 28 June 2012, after a period of Navy Test and Evaluation (commencing at Initial Operational Release in January 2010 and concluding September 2011), Chief of Navy endorsed the Upgraded FFG capability for Operational Release (OR) excluding the Torpedo Defence System (TDS), Le Scut Anti Submarine Warfare (ASW) Decoy and the Mine and Obstacle Avoidance System (MOAS) components of the Underwater Warfare System (UWS). An operational limitation has been placed on the Electronic Support (ES) System Long Range Chaff Rocket (LRCR), PIRATE Infra Red Decoy and the Electro-Optical Tracking System (EOTS) that has not precluded the OR of these systems. A defined solution to progress the underwater warfare sub-systems excluded for OR to materiel release/in-service (or other determination), the conduct of further trials, and remaining requirements to finalise the Acquisition Agreement are under review. When known, a schedule for Final Materiel Release and MAA completion can then be determined.

Materiel Capability Performance

All four FFGs have received their upgraded equipment. **Under** the provisions of a Deed of Amendment **constituted between the Commonwealth and Thales Australia in November 2008**, **Contractual Acceptance of HMAS *Sydney* and *Darwin* was achieved in November 2008, and HMAS *Melbourne* in December 2008.** Following closure of open software problem reports**, Final Acceptance of FFG Upgrade Software occurred May 2009 in accordance with the Deed**. HMAS *Newcastle*, the last FFG to enter the program, achieved Provisional Acceptance by the DMO and was handed back to Navy in May 2009 prior to achieving Contractual Acceptance in September 2009. **Since Acceptance all four HMA Ships *Sydney*, *Melbourne*, *Darwin* and *Newcastle* have been in operation with Navy.** The Team Trainer also achieved Acceptance in September 2009 and the WSSC achieved Acceptance in December 2009.

Tactical Data Information Link, LINK 16, functionality testing was achieved in August 2008 and assessed suitable for operational use under waiver. The first 'live' LINK 16 Data Link to be established by a RAN unit was achieved in January 2009 between HMAS *Melbourne* and various US Navy units.

A three phased 'incremental' approach for IOR and Operational Release (OR) **was** agreed by the Defence Materiel Organisation (DMO) and Navy as the most pragmatic means by which to bring the FFG class to full operational employment. Phase 3 was achieved in January 2010 and IOR by Navy for the FFG Class has been achieved except the Torpedo Defence System (TDS) and by association the Le Scut decoy system Mitigation for the current torpedo defence capability for FFGs has included the installation of an underwater active decoy system (AN/SLQ-25C, NIXIE) in HMA Ships *Melbourne* and *Newcastle* in 2011, **and *Darwin* in 2012. In addition, the** Defence Science and Technology Organisation (DSTO) **has been engaged** to further Navy's understanding of the demands of the FFG for torpedo defence in various operational environments.

A Naval Operational Test and Evaluation (NOTE) period was conducted in September 2010 for the Underwater Warfare Systems (UWS) capability. Issues were identified with the availability and serviceability of the UWS, **the** human machine interface and operator experience. Remediation of these deficiencies have been undertaken and a further period of testing of the UWS capability, including experimentation with the TDS **in September** 2011 and subsequent analysis of trial results, **has been conducted**.

Similarly, an extensive five week NOTE period to baseline the upgraded FFG Air Warfare capability was conducted in quarter 4 of 2010, and again in June 2011 with HMAS *Sydney* undertaking the combined Acceptance Test and Operational Test and Evaluation live-fire events for the SM-2 missile test program at the US Navy Pacific Range Facility (Hawaii). System performance for anti-ship missile detection during the combined Acceptance Test and Operational Test and Evaluation period was very good.

On 28 June 2012 Chief of Navy (CN) endorsed the upgraded FFG capability for OR excluding the TDS and Le Scut (rejected at IOR) and MOAS elements of the UWS, and placed an operational caveat on ES, LRCR, PIRATE Decoy and EOTS. CN has deferred a decision on MOAS OR subject to a further period of NOTE currently scheduled for late 2012. Rectification and follow-on test and evaluation mandated for upgraded systems under caveat has not precluded OR of these systems.

The further actions required to achieve closure of Project SEA 1390 PH2.1, including any further NOTE activities, are being reviewed with Navy.

1.3 Project Context

Project	Explanation
Background	The project's implementation phase commenced in June 1999, when the Prime Contract with Australian Defence Industry (now Thales Australia) was signed. The contract **afforded** Thales total contract performance responsibility and sole responsibility for the upgrade of each FFG. The role of the Systems Program Office in relation to the technical aspects of the upgrade **was** generally limited to, reviewing and commenting upon the activities proposed to be conducted by the prime contractor. As a result of the contractor taking substantially longer than the original schedule, the project was re-baselined in April 2004 and again in May 2006. The re-baselining deferred the delivery of all FFGs with the last ship being deferred by four and a half years. In November 2003 the Government determined that the Guided Missile Frigate fleet would be reduced from six to four ships with the two oldest FFGs to be removed from service, prior to their planned upgrade and life extension. In mid 2006 the prime contract was changed with scope reduced from six to four ships (oldest FFGs, HMA Ships *Adelaide* and *Canberra* not upgraded), settlement of delay claims, changes to the master schedule and milestones, and changes to provisional acceptance processes of upgraded ships from the prime contractor all contributed to the delays. The financial impact of this global settlement was reflected by a reduction in prime contract price of $40m. This **recognised that** the engineering development investment and six ship sets of equipment were not affected by the reduction in the number of upgraded ships from six to four. Subsequent difficulties with compliance led the Commonwealth to refuse approval of **the** contractor's test procedures. In April 2005 Thales elected to proceed 'at its own risk' with a test and trial regime outside of the contractual terms. The contractor saw this as the only feasible approach to completing the project. The complexity of the program was initially underestimated. The performance specifications were not formalised and agreed before contract signature and this impacted the delivery and agreement of the offered capability and development of the test program. Nonetheless, significant progress resulted in the achievement of contractual acceptance of all four FFGs and facilitated the decision by the CN to approve IOR of this capability and begin planning for its operational employment. All four FFGs were offered for IOR in November 2009 and CN endorsed the IOR in January 2010 with a caveat on the TDS. Also, the Government agreed to remove the FFG Upgrade Project from the list of Projects of Concern as the issues and problems that had made it a Project of Concern were remediated sufficiently that a path to completion **was** clearly defined. The RAN has inducted the FFGs into a formal program of NOTE to fully characterise the performance of the ships in a variety of contemporary operational environments. This Test & Evaluation program **also supported** the tuning, configuration and augmentation of the systems in ships deploying into operational areas to ensure that they have the best available capability to meet the threats in those regions. HMAS *Sydney* **as** lead ship for this program **completed** testing **in the** third quarter 2010 and second quarter 2011. NOTE **concluded** in the fourth quarter of 2011**.**

Uniqueness	Complex and extensive weapon, sensor, combat, and command and control systems upgrades **were** required to be integrated into an Australian developed combat data system architecture. The integration work **included** the world's first FFG installation of a Vertical Launching System for firing Evolved Sea Sparrow Missiles and Mk 92 Mod 12 fire control system into the *Adelaide* class FFG. The FFG upgrade project **included** the development of the Australian Distributed Architecture Combat System **(ADACS) software containing** over one million source lines of newly developed computer code. **The ADACS** software **was developed** in conjunction with electronic system hardware development and integration, **increasing technical complexity**. The **ADACS** processes and displays radar, sonar and electronic support system data, assisted by a new Australian developed Radar Integrated Automatic Detection and Tracking system.
Major Challenges	Significant challenges were progressed in conjunction with progressive delivery of the capability. Initial Operational Release for the upgrade capability was approved by CN in January 2010 with the exception of the **TDS** and, by association, the Le Scut torpedo decoy, as the effectiveness of the decoy is dependent upon information provided by the torpedo detection and classification system. This decision initiated the next significant challenge of NOTE of the delivered FFG capabilities **and** a period in which the operational effectiveness, suitability and the attendant levels of risk associated with operating the ships in a wide variety of roles w**as assessed and** defined. **To meet the operational preparedness requirements of the rejected TDS and in consideration of** the remaining service life of the ships of the class, an underwater active decoy system **(AN/SLQ-25C, NIXIE) has been installed aboard HMA Ships *Melbourne* and *Newcastle.* A third decoy system is being procured for HMAS *Darwin.* NIXIE will not be installed on HMAS *Sydney* being the first FFG to be withdrawn from service.**
Other Current Projects/Sub-Projects	**SEA 1390 Phase 4A**: Purchase of the Mk698 Test Set for logistic support and all up round depot level maintenance of the Standard Missile 2 at Defence Estate Orchard Hills, Sydney. **SEA 1390 Phase 4B**: Acquire and integrate the Standard Missile 2 into four RAN *Adelaide* Class FFGs at the Mid-Course Guidance standard, and acquisition of Initial Ship Outfit and Inventory Stock missiles.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1390 Phase 4B Standard Missile 1 Missile Replacement	Acquire and integrate the Standard Missile 2 missile into four RAN Adelaide Class Guide Frigates at the Mid-Course Guidance standard, and acquisition of Initial Ship Outfit and Inventory Stock missiles.	SEA 1390 Phase 4B builds on the capability from SEA 1390 Phase 2 and was dependant on the capability to be sufficiently mature for the inclusion of this additional capability.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Dec 97	Original Approved		1,266.0	1
Nov 98	Real Variation – Budgetary Adjustments	(0.1)		2
Jul 99	Real Variation – Transfer	(152.6)		3
Aug 04	Real Variation – Budgetary Adjustments	(0.7)		4
Oct 11	**Real Variation – Scope Reduction**	**(66.7)**		**5**
Oct 11	**Real Variation – Budget Cost Saving**	**(10.1)**		**5**
			(230.2)	
Jul 10	Price Indexation		230.3	6
Jun 12	Exchange Variation		**183.5**	
Jun 12	**Total Budget**		**1,449.6**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – Thales Australia	**(1,249.1)**		
	Other Contract Payments / Internal Expenses	**(98.3)**		7
			(1,347.4)	
FY to Jun 12	Other Contract Payments / Internal Expenses	**(1.5)**		7
			(1.5)	
Jun 12	**Total Expenditure**		**(1,348.9)**	
Jun 12	**Remaining Budget**		**100.7**	

Notes	
1	This project's original DMO budget amount is that prior to achieving Second Pass Government approval.
2	Overseas travel not required.
3	Transfer to Project SEA 1428 PH 2A for the procurement of Evolved Sea Sparrow missiles on behalf of SEA 1390 PH 2.
4	Administrative Savings harvest.
5	**Real Cost Decrease: comprising $66.7m for Prime Contract partial termination (reflecting the Government's decision in November 2003 to reduce the FFG fleet from 6 to 4 ships) and $10.1m accumulated savings identified at the 2011-12 Portfolio Budget Estimates review for return to the Defence Capability Program.**
6	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $228.1m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $2.2m having been applied to the remaining life of the project.
7	Other expenditure comprises: External Service providers, spares contract ES 3701, UWS Spares, legal support operating expenditure, other capital expenditure not attributable to the aforementioned prime contract and minor contract expenditure.

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**FY 2011-12 actual spend of $1.5m was achieved against the approved latest planned spend (FY 2012-13 PBS) of $8.9m. The under-spend is attributable to Commonwealth delay to US Government FMS administrative processes to procure a replacement TDS, NIXIE ($3.6m), a review of risk/issue treatment activity addressing UWS performance ($2.5m), and under engagement of required commercial project management support ($1.1m) now managed and funded under the Sustainment Program.**
			Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(7.4)	Commonwealth Delays	
8.9	**1.5**	**(7.4)**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
Thales Australia	Jun 99	898.6	1,042.7	Variable	DEFPUR 101	1, 2

Notes

1	The original contract was structured requiring price increases to be agreed at the time for each ships major refit concurrent with Upgrade production. $29.1m of work for initial FFG Upgrade equipment spares were not included in the original contract.
2	The Contract Final Acceptance formally occurred on 2 March 2011 after an extensive contract closure due diligence review and contractor completion of obligations as recorded in a Contract Close Out Deed established 25 June 2010. The final payment under the Thales Upgrade Contract, being final price variation on Milestone 71(b), was made in June 2011.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
Thales Australia	6	4	Upgraded ships and concurrent refit.	1

Major equipment received and quantities to 30 Jun 12

Four ships have been accepted. Engineering and maintenance arrangements established.

Notes

1	Other items of equipment under this contract include associated support facilities, training devices and spares, as noted in Section 1.1 of the PDSS.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Completion of all Software Specification Reviews	Aug 00	Aug 00	May 01	9	1
Preliminary Design	Completion of all Preliminary Design Reviews	Oct 00	Oct 00	May 01	7	1
Critical Design	Completion of all Critical Design Reviews (Critical)	Apr 01	Nov 06	Apr 07	72	1

Notes

1	Software development and design was delayed due to Australian Defence Industry (now Thales

	Australia) repatriating the Combat System Design Authority role from Lockheed Martin in early 2001 and implementing the Australian Distributed Architecture Combat System. Thales then elected, as allowed by the Prime Contract, to deliver the contracted capability in three software baselines for technical risk mitigation. Critical Design Review to Baseline Build 2 software completed in December 2006. Critical Design Review for Baseline Build 3 software completed in April 2007.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	HMAS *Sydney*	Dec 02	Sep 05	Sep 05	33	1
	HMAS *Melbourne*	Jul 03	Feb 07	Jun 07	47	1
	HMAS *Darwin*	Feb 04	Feb 08	May 08	51	1
	HMAS *Newcastle*	Jul 04	Feb 09	Feb 09	55	1
Provisional Acceptance	HMAS *Sydney*	May 03	Dec 06	Dec 06	43	1
	HMAS *Melbourne*	Jan 04	Oct 07	Oct 07	45	1
	HMAS *Darwin*	Jul 04	Aug 08	Aug 08	49	1
	HMAS *Newcastle*	Jan 05	Jun 09	May 09	52	1
	Team Trainer	Apr 02	Feb 07	Nov 07	67	1
	Warfare Systems Support Centre	Apr 04	Nov 08	Nov 08	55	1
Acceptance	HMAS *Sydney*	Apr 04	Nov 08	Nov 08	55	1
	HMAS *Melbourne*	Sep 04	Nov 08	Dec 08	51	1
	HMAS *Darwin*	Mar 05	Nov 08	Nov 08	44	1
	HMAS *Newcastle*	Sep 05	Dec 09	Sep 09	48	1
	Team Trainer	Sep 06	Dec 09	Sep 09	36	1
	Warfare Systems Support Centre	Sep 06	Dec 09	Dec 09	39	1
	Contract Final Acceptance	Sep 06	Feb 11	Mar 11	54	1

Notes	
1	Schedule delays to this program have resulted from the program complexity being underestimated from the outset. The **Prime Contract schedule has been re-baselined on two occasions, April 2004 and May 2006.** Further schedule adjustment to project end date has not been required and the **Contract formally closed in March 2011**.

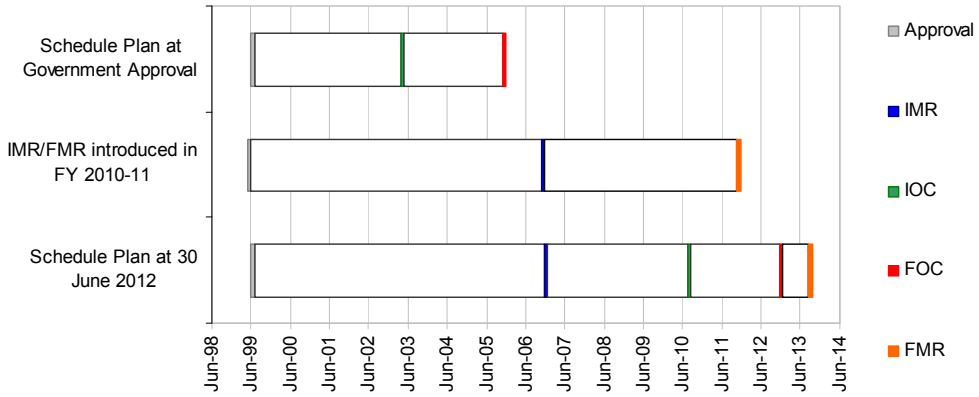
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Dec 06	N/A	
Initial Operational Release				
HMAS *Sydney*	May 03	Jan 10	79	A three phased 'incremental' approach IOR **was** agreed by the DMO and Navy as the most pragmatic means by which to bring the FFG
HMAS *Melbourne*	Jan 04	Jan 10	71	
HMAS *Darwin*	Jul 04	Jan 10	65	

HMAS *Newcastle*	Jan 05	Jan 10	60	class to operational employment. The first three FFGs were at IOR Phase 1 **(Maritime Interception Operations)** in April 2009 and **Phase 2 (Anti-Ship Missile Defence) in October 2009. All four FFGs achieved IOR third and final phase (Underwater Warfare Systems) when Chief of Navy endorsed the complete upgraded capability (excluding the Torpedo Defence System) to proceed to a program of NOTE in January 2010.** The Torpedo Defence System **(TDS)** and, by association, the Le Scut torpedo decoy (as the effectiveness of the decoy is dependent upon information provided by the torpedo detection and classification system**) were rejected as unlikely to achieve operational viability.** **To meet the operational preparedness requirements of the rejected TDS, the acquisition of an underwater active decoy system (AN/SLQ-25C, NIXIE) was initiated and, in consideration of the remaining service life of the ships of the class, installed in HMA Ships *Melbourne* and *Newcastle* being the final two ships to be removed from service.** **NOTE completed in September 2011.** **Due to a change in operational deployments of the FFGs a third NIXIE is being procured for HMAS *Darwin*.**
Initial Operational Capability (IOC)	N/A	Aug 10	N/A	There is no Original Planned date for IOC for this Project. The dates provided in previous MPRs for IOC disclosure represented IOR, which at the time was the most appropriate IOC equivalent as the project did not have an endorsed IOC. As a result of a revision to the original Materiel Acquisition Agreement (MAA), the project now has an endorsed IOC which has been disclosed accordingly.
Operational Release				
HMAS *Sydney*	Jul 04	**Jun 12**	**95**	**On 28 June 2012 CN endorsed the upgraded FFG capability for OR excluding the TDS and Le Scut (rejected at IOR) and MOAS elements of the UWS, and placing an operational caveat on ES, LRCR, PIRATE Decoy and EOTS. CN has deferred a decision on MOAS OR subject to a further period of NOTE currently scheduled for late 2012. Rectification and follow-on test and evaluation mandated for upgraded systems under caveat has not precluded OR of these systems.**
HMAS *Melbourne*	Dec 04	**Jun 12**	**90**	
HMAS *Darwin*	Jun 05	**Jun 12**	**84**	
HMAS *Newcastle*	Dec 05	**Jun 12**	**78**	

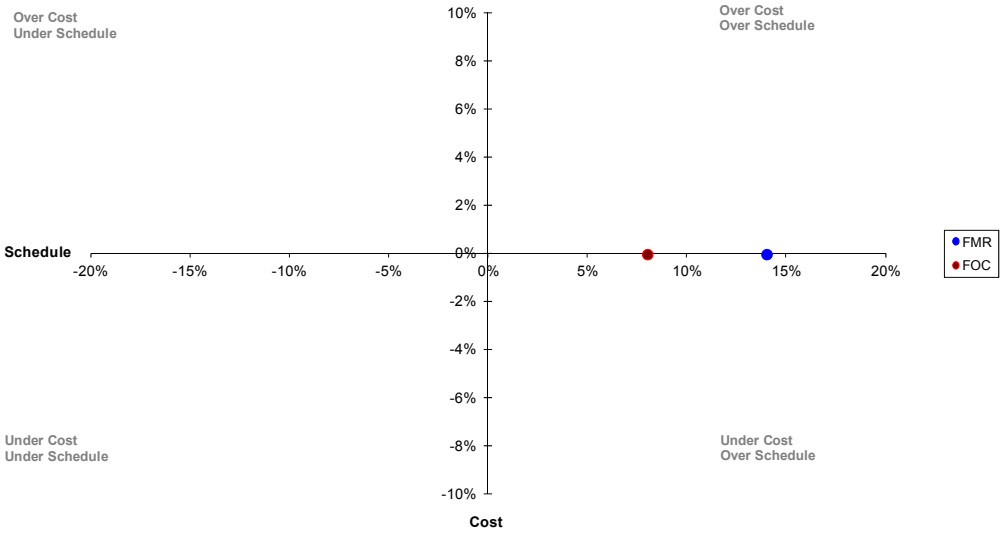
Final Materiel Release (FMR)	Dec 11	**Sep 13**	**21**	FMR is nominally considered prior to Contract Final Acceptance from the Prime Contractor. The FFG Upgrade Prime Contract Final Acceptance occurred 2 March 2011. The Navy Capability Manager has not yet endorsed FMR for the FFG Upgrade Project **so** this **event** has been aligned to the conclusion of NOTE activities and the achievement of **OR**/FOC included under a revision to the original MAA **approved in June 2011.** **CN has endorsed OR of the Upgraded FFG capability that excluded underwater warfare systems and imposed an operational limitation on Electronic Support and some elements of Air Area Defence (AAD). A determination on the UWS rejected for OR and remaining requirements to achieve Final Materiel Release are under review and to be agreed with Navy.**
Final Operational Capability (FOC)	Dec 11	**Dec 12**	**12**	**FOC as indicated in the Project MAA is aligned to OR of the upgraded FFG capability.** **The Upgraded FFG capability has achieved conditional OR that excluded UWS and limited operation of the ES and other AAD systems. FOC and MAA completion is dependent on a solution/determination for UWS excluded for OR and remaining/ outstanding requirements.**

Schedule Status at 30 June 2012



Section 4 – Project Cost and Schedule Status

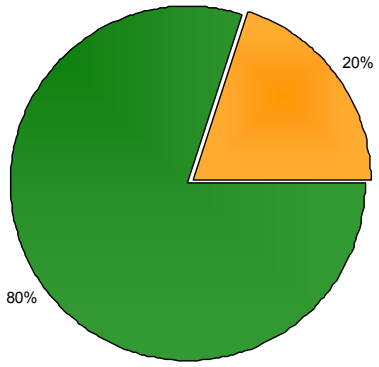
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Green:

The project is currently meeting the capability requirements as expressed in the Materiel Acquisition Agreement.

Amber:

Capability and Final Materiel Release flagged AMBER as it is dependent on Navy acceptance of the entire upgraded FFG capability. The DMO has sought guidance/direction from CN on UWS acceptance issues and support requirements. The requirement for a Mk92 MOD 12 FCS test bed and training facility is also to be reviewed by Navy. Proceeding with this requirement will extend FMR/FOC to at least 2014.

Red:

N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
N/A	N/A
Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
Project delivery and close-out will require dedicated resources with continuity knowledge.	**Subsequent to Prime Contract Final Acceptance, Project management activities have been maintained by Project Office personnel that have transitioned to FFG SPO Sustainment functions and continuing contracted management support. A significant number of FFG SPO positions are currently vacant, making the conduct of SPO business difficult, particularly the level of effort associated with upgraded FFG capability Operational Release and finalising the Project. SPO re-structure is currently in train, however, this initiative cannot be fully implemented with the currently imposed restriction on DMO recruitment.**

6.2 Major Project Issues

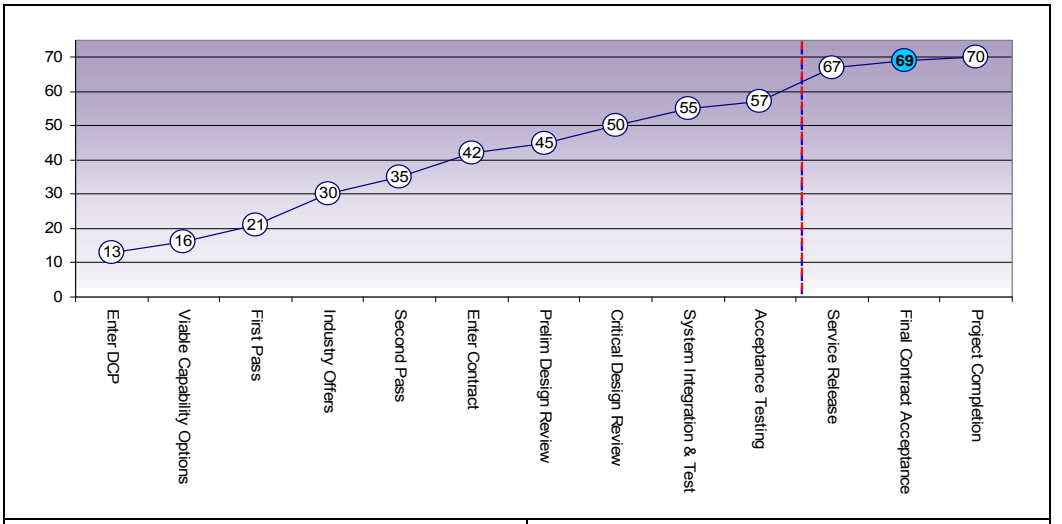
Description	Remedial Action
For Operational Release, the Electronic Support (ES) System (C-Pearl) performance may not be met.	In January 2010 CN endorsed the ES System for Initial Operational Release and commencement of formal NOTE. Assessment of the ES system concluded with combined Acceptance Test and Operational Test and Evaluation live-fire events for the SM-2 missile test program at the US Navy Pacific Range Facility (Hawaii) in June 2011. CN to consider ES Operational Release post analysis and report of trial results in **May 2012.** **This issue has been down graded due to CN endorsement for OR of the ES System.**

For Operational Release, the Torpedo Defence Systems integration and performance may not be met and is primarily associated with system grooming and population of supporting libraries.	IOR for the upgraded UWS capability was approved by CN in January 2010 with the exception of the Torpedo Defence System as the system was assessed as unlikely to meet operational viability. By association, the Le Scut torpedo decoy was also excluded from IOR as the effectiveness of the decoy is dependent upon information provided by the torpedo detection and classification system. The acquisition and installation requirement for an underwater active decoy system was initiated for HMA Ships *Melbourne* and *Newcastle* to satisfy operational preparedness requirements but with due regard to the remaining service life of the ships of the class. Navy Operational Test and Evaluation of the UWS **completed September** 2011 **and** full analysis of the results **have been** finalised. **CN approved the upgraded FFGs for OR on 28 June 2012 excluding the TDS Albatross Towed Array and Le Scut ASW Decoy rejected at IOR. A solution to achieve serviceability/materiel release (or other determination) for UWS components excluded at IOR/OR is yet to be identified/agreed with Navy.**
For Operational Release, the Hull Mounted Sonar (Spherion) performance may not be met.	Issues were identified with the availability and serviceability of the UWS capability, human machine interface and operator experience. Subsequent remediation has been undertaken and further testing conducted **August/September** 2011. The full analysis of the results of the UWS operational test and evaluation program **have been** finalised. **CN approved the upgraded FFGs for OR on 28 June 2012 excluding the passive component of the HMS, TDS and Le Scut ASW Decoy. A solution to achieve serviceability/materiel release (or other determination) for UWS components excluded for OR is yet to be identified/agreed with Navy.**
For Operational Release, the Mine and Obstacle Avoidance System performance may not be met.	**CN deferred decision for OR of the Mine and Obstacle Avoidance System (MOAS) on the RAN Test, Evaluation and Acceptance Authority (RANTEAA) recommendation to conduct further NOTE of the system currently programmed for late 2012. Progression of the realised UWS capability (including MOAS if rejected) to materiel release/in-service (or other determination) is an on-going issue and yet to be identified/agreed with Navy.**

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	10	10	10	10	10	10	9	69
Final Contract Acceptance	Project Status	9	8	9	9	9	10	9	63
	Explanation	• **Schedule:** In-Service Delivery has not been achieved. **CN has endorsed the upgraded FFG capability for OR but has excluded TDS, deferred a decision on MOAS post NOTE programmed November 2012, and placed an operational caveat on ES and other AAD systems. Finalisation of the Project MAA is dependent on resolution/determination for OR rejected/qualified items and remaining requirements to be met under the Agreement.** • **Cost**: The Project Office is confident that the FFG Upgrade will deliver within the approved total Project Cost but is not yet certain (Proven) as some contingency may be required to satisfy Navy requirements for Operational Release (FMR/FOC). • **Requirement:** Capability has been contract acceptance tested and achieved IOR. Demonstration Operational Test and Evaluation of capability completed **September 2011**. **CN has endorsed the upgraded FFG capability for OR excluding elements of the UWS and with an operational caveat on ES and some AAD systems. A solution to progress OR excluded and under caveat items, and remaining supplies to meet the requirements specified in the MAA are under review and pending Navy agreement.** • **Technical Understanding:** operation of the delivered capability has been transferred to Navy (occurred at IOR). Additional operator knowledge/understanding required for combat system elements identified during the NOTE period (completed **September** 2011). • **Technical Difficulty:** Technical solution design/integration contract acceptance tested and OT&E (completed **September 2011**) by Navy. Analysis and report presented to, **and endorsed by** CN for Operational Release (proven) **in June 2012.**							



2010-11 DMO MPR Status - - - -	2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Requirements and specifications must be well defined and agreed before contract signature. Where detailed specifications cannot be defined fully prior to contract signature, such as when systems definition and new design work must be undertaken within a developmental project phase, then the end capability requirements and priorities must be well defined and agreed.	Requirements Management
A fundamental issue to consider at the time of capability and project definition is how the capability should be acquired. If the project is developmental, then consideration should be given to methods other than a fixed price contract for achieving the capability. Contracts should include appropriate clauses that recognise the complexities of verifying and validating a software development project. Multi platform upgrades should allow for implementation and testing/acceptance of the first platform without committing to a full class upgrade of all platforms. Conducting an upgrade of an existing capability concurrent with scheduled maintenance availability requires very detailed planning and careful consideration of the supporting contract clauses.	Contract Management Schedule Management First of Type Equipment
Procurements that include significant change to software-intensive systems and complex system integration have many inherently high-risk activities, which must be analysed and appropriate risk mitigation processes applied. Such risks are often under-estimated in the planning phase.	First of Type Equipment

The contract schedule must be accepted by all parties as realistic and achievable from the outset. Each party must be committed to achievement of the schedule and aware of the consequences of non-achievement, plus any provisions for delay outside the contractor's control. The contract should contain: • milestones which enable the Commonwealth to unambiguously assess Contractor performance from the outset of the Contract; • with the exception of non-recurring engineering effort, payment of all or a substantial part of the contract price should be subject to achievement of clear project milestones; • milestones should reflect delivery of contracted requirements to the Commonwealth, not just reaching intermediate points on the timeline; • milestones which enable use of the equipment and supplies (such as integrated logistics support and training) should be given similar weight as delivery of the equipment itself; • payment on achievement of milestones should be conditional on achievement of previously scheduled milestones; • payment of milestones should also be tied to remedies under the contract to allow the Commonwealth to seek redress; and • clear entitlements of the Commonwealth to access all contractor project data (including internal workforce planning data) so as to be able to make informed assessments if a milestone is not achieved.	Contract Management
For very large developmental contracts, project managers must ensure that the contractor maintains sufficient focus and resourcing on documenting what is being delivered and how to use it (through ILS, configuration management and training). Milestones must be structured so that the contractor is not tempted to focus on equipment deliverables only. Payment for equipment milestones should be conditional on achievement of related ILS milestones. The contract should be clear on configuration management requirements of ILS products in an incremental delivery software development project. This should align to milestones and remedies in the contract.	Contract Management Requirements Management
Objective acceptance criteria are required to ensure there is no scope for dispute as to whether the criteria have been met. Criteria for determining contractual achievement should support those criteria used by Defence for determining achievement by DMO of the measures of effectiveness in the MAA.	Contract Management Requirements Management
Major maritime software development should be incremental and delivery does not have to be aligned with the platform modification program.	First of Type Equipment Requirements Management
Implement a progressive acceptance methodology from the outset for all project data/ documentation supplies and requirements acceptance objective quality evidence in order to progressively increase confidence of all stakeholders involved with regard to project outcomes.	Contract Management
Close liaison and communication with Navy stakeholders is required throughout the Project life. Navy regulator engagement must be open and transparent from Project commencement to FOC so that the *Ti338 Report on the Limitations and Performance State* residual issues/risks are well understood and easily accepted. Where capability delivered falls short of Navy customer initial expectations as agreed in the MAA, the process of securing concessions/agreement is needed to allow efficient and prompt Project closure to avoid/limit inefficient use of resources.	**Project Management**

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	RADM Peter Marshall
Branch Head	CDRE Michael Houghton
Project Director	Mr Mal Adams **(to Nov 11)** **CAPT Greg Reid, RAN (Nov 11–Feb 12)** **CAPT Mona Shindy, RAN (Feb 12–current)**
Project Manager	Mr Mal Adams **(to Nov 11)** **CAPT Greg Reid, RAN (Nov 11–Feb 12)** **CAPT Mona Shindy, RAN (Feb 12–current)**

Project Data Summary Sheet[245]

Project Name	**BUSHMASTER PROTECTED MOBILITY VEHICLE**
Project Number	**LAND 116 Phase 3**
Capability Type	Replacement
Service	Australian Army and Royal Australian Air Force
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Nov 98
Total Approved Budget (Current)	**$1,032.1m**
2011-12 Budget	**$87.3m**
Project Stage	Acceptance Testing
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

This project is to deliver 807 vehicles in seven variants; troop, command, mortar, assault pioneer, direct fire weapon, air defence and ambulance as well as up to 184 trailers. The 807 vehicles being delivered consists of 737 vehicles that are to meet the capability requirement and an additional 70 to meet future operational attrition. The additional 70 vehicles are a component of an acquisition of an additional 101 vehicles that was announced by Government in May 2011, the remaining 31 additional Protected Mobility Vehicles (PMV) are to be managed as a sustainment activity outside of Project Bushranger. These vehicles will provide protected land mobility to Army units and Royal Australian Air Force (RAAF) Airfield Defence Guards. In addition to the acquisition of the vehicles through the Approved Major Capability Investment Program, a number of enhancements are being made to the vehicles through the Rapid Acquisition process. These enhancements do not form part of the Project LAND 116 Phase 3, but do impinge upon the project.

1.2 Current Status

Cost Performance

The project remains within approved budget. Some Signal Onboard Two-Wire Audio System internet protocol (SOTASip) payments to the contractor which had been rescheduled as a result of delays have now been paid as a result of the SOTASip contract amendment being signed.

As at 30 June 2012, project LAND 116 Phase 3 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

All Production Period 1 (PP1), PP2 **and PP3** vehicle deliveries are now complete. **Thales has completed delivery of the 31 additional PMVs which were being managed as a sustainment activity outside of**

[245] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

Project Bushranger. Delivery of **the Project's** 70 PP4 vehicles commenced in May 2012 and **will** conclude in the first quarter of 2013. **The delivery of PP4 vehicles to the Commonwealth is on schedule with 9 of the 70 vehicles delivered as at 30 June 2012.**

Materiel Capability Performance

All variants are meeting their required specifications. The prototype for the Air Defence variant was completed by Thales and accepted by the project in October 2010.

The project is currently in contract with Thales for the Detailed Design of an External Composite Armour (ECA) solution. **It is anticipated that the entire ECA Detailed Design will be completed in August 2012.** The PMV Trailer tender response from Thales on 22 May 09 was evaluated and deemed non-compliant and not value for money. The project is currently determining the most appropriate way forward to achieve the trailer capability.

1.3 Project Context

Project	Explanation
Background	The Bushranger Project is being conducted in three phases: Phase 1 involved the motorisation of the infantry battalions of 6 Brigade, with 268 interim infantry mobility vehicles, based on the in-service Land Rover PERENTIE 4x4 and 6x6 vehicles and the procurement of an additional 25 support vehicles. Phase 2 consisted of Phase 2A the development of the infantry mobility vehicle specification and the release of an Invitation to Register Interest and Phase 2B the release of a Request for Tender and the trialling and evaluation of successful contender vehicles. Phase 3 is the full rate production of the protected vehicles. The Production Contract Option was executed on 1 June 1999 with Australian Defence Industries for the supply of 370 Bushmaster vehicles by December 2002. A range of problems emerged with design enhancements, cost, and schedule slippage in the contract, shortly after the Production Option was exercised, leading to renegotiation of the Contract in July 2002 for 299 vehicles. This phase has been divided into **four** separate production periods that reflects the increase over time in the quantity of vehicles being acquired. The Production Periods are as follows: Production Period One (PP1): During this Production Period 300 vehicles in six variants were acquired; troop, command, mortar, assault pioneer, direct fire weapon and ambulance. This period reflects the final position of the original protected mobility requirement. Defence had contracted for 299 vehicles; however, it then sold 25 vehicles back to Thales for sale to the Netherlands and received 26 vehicles from Thales as consideration. Production Period Two (PP2): During this Production Period 144 vehicles were acquired in five variants consisting of; troop, command, mortar, direct fire weapon and ambulance. This period reflected the change to the Army's structure under the Enhanced Land Force Phase 1. Defence had contracted for 143 vehicles; however, it then allowed Thales to divert 24 vehicles from the production line for sale to the United Kingdom, thereby delaying delivery to Defence. Defence received one additional vehicle from Thales as consideration. Production Period Three (PP3): **During this Production Period** an additional 293 vehicles **were acquired** to meet the Medium Protected Mobility vehicle component of LAND 121 Phase 3 Project Overlander. This included all six variants and an air defence variant. In addition purpose designed Bushmaster trailers and External Composite Armour will also be acquired. Production Period Four (PP4): In May 2011 the Government announced the acquisition of an additional 101 PMVs to replace 31 battle damaged PMVs and to accommodate future attrition. Project Bushranger **is managing** the delivery of all 101 PMVs, however 31 of these PMVs will be managed as a funded sustainment activity outside of Project Bushranger. As part of this requirement LAND 116 Phase 3 will also procure 70 MEAO upgrade kits (current standard blast kits as **o**pposed to the improved blast protection). Delivery of the additional 101 PMVs will be completed in the first quarter 2013. As a result of operational experience a number of enhancements are being made to the Bushmaster vehicle to enhance crew survivability. This includes Protected Weapon Stations, Automatic Fire Suppression Systems and purpose-design Spall Curtains which

	are being progressively fitted to vehicles under a Rapid Acquisition Framework. These are funded outside of LAND 116 Phase 3. In December 2007 the Chief of Army redesignated the Bushmaster Infantry Mobility Vehicle as the Bushmaster Protected Mobility Vehicle. This report relates to LAND 116 Phase 3 only.
Uniqueness	The Bushmaster Protected Mobility Vehicle has been developed and built in Australia by Thales to meet a niche requirement of Australian forces.
Major Challenges	Major challenges for the project include achieving Towing Certification and the Introduction into Service of an External Composite Armour (ECA) solution. The PMV Towing Certification trials will determine the PMV's capacity to tow. Satisfaction of the PMV Towing Certification is a precursor to the PMV trailer acquisition activity. The achievement of the Detailed Design of the ECA solution will be a key milestone in delivering this capability. In addition, managing the integration and configuration of the baseline vehicle while incorporating upgrades to meet current operational threats will continue to be a challenge.
Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Nov 98	Original Approved		295.0	
Jul 07	Real Variation – Scope	154.8		1
Aug 07	Real Variation – Scope	360.6		2
Oct 11	Real Variation – Scope	**103.9**		**3**
			619.3	
Jul 10	Price Indexation		124.6	**4**
Jun 12	Exchange Variation		**(6.8)**	
Jun 12	**Total Budget**		**1032.1**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – Thales Australia (Prime)	**(552.0)**		
	Contract Expenditure – Thales Australia (SOTASip)	**(28.1)**		
	Other Contract Payments / Internal Expenses	**(103.8)**		**5**
			(683.9)	
FY to Jun 12	Contract Expenditure – Thales Australia (Prime)	**(60.0)**		
	Contract Expenditure – Thales Australia (SOTASip)	**(0.5)**		
	Other Contract Payments / Internal Expenses	**(26.3)**		**6**
			(86.8)	
Jun 12	**Total Expenditure**		**(770.7)**	
Jun 12	**Remaining Budget**		**261.4**	

Notes	
1	Additional Protected Mobility Vehicles for Enhanced Land Force requirements.
2	Additional Protected Mobility Vehicles for Overlander requirements.
3	**Additional Protected Mobility Vehicles to replace Battle Casualty Vehicles.**
4	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $118.9m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $5.7m having been applied to the remaining life of the project.
5	Other expenditure comprises: ILS deliverables (**$36.1m**), facilities (**$7.1m**), PSPs (**$0.9m**), project management and operating expenses (**$13.7m**), Automatic Fire Suppression Kits (AFSS) (**$9.4m**), ancillary equipment (**$19.9m**), support test equipment (**$0.1m), SOTAS headsets ($5.2m)**, system engineering ($5.6m), test and evaluation ($1.1m), **External Composite Armour ($4.0m)** and travel ($0.7m).
6	Other expenditure comprises: ILS deliverables (**$16.2m**), project management and operating expenses (**$1.0m**), SOTAS headsets (**$0.9m**), **test and evaluation ($5.0m**), and ECA (**$3.2m**).

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The year end** variance of **($0.5m)** is **due to:**
			Overseas Industry	
		(0.5)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
87.3	**86.8**	**(0.5)**	**Total Variance**	

- **delay in SOTAS deliveries ($1.8m);**
- **delay in Detailed Design of ECPs ($0.8m);**
- **early vehicle milestone payments $4.1m;**
- **delay in deliveries of PP4 upgrade components ($2.4m);**
- **early delivery of ILS $1.3m;**
- **delays to TMS ($0.7m); and**
- **other cost ($0.2m).**

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
Thales Australia	June 99	170.0	**670.4**	Variable	DEF PUR 101	1
Thales Australia (SOTASip)	Feb 09	35.8	35.8	Fixed	ASDEFCON Vol 2	

Notes	
1	The date of the original tender and therefore the base dollar date of the original contract was Oct 95.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
Thales Australia	370	807	Bushmaster Protected Mobility Vehicles	
Thales Australia (SOTASip)	737	737	Communication System	

Major equipment received and quantities to 30 Jun 12

During PP1 300 vehicles in six variants were acquired; troop, command, mortar, assault pioneer, direct fire weapon and ambulance. During PP2, 144 vehicles were acquired in five variants; troop, command, mortar, direct fire weapon and ambulance. **During** PP3 a further 293 vehicles **were** acquired in 7 variants. In PP4 70 additional troop variants will be acquired by the Project. **Thales has completed delivery of the 31 additional PMVs which were being managed as a sustainment activity outside of Project Bushranger. Delivery of the Project's 70 PP4 vehicles commenced in May 2012 and will conclude in the first quarter of 2013. The delivery of PP4 vehicles to the Commonwealth is on schedule with 9 of the 70 vehicles delivered as at 30 June 2012.**

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved/ Forecast	Variance (Months)	Notes
System Requirements	Troop Vehicle	N/A		Aug 03	N/A	
	Assault Pioneer Vehicle	N/A		Oct 06	N/A	
	Command Vehicle	N/A		Jan 06	N/A	
	Mortar Vehicle	N/A		Feb 09	N/A	
	Direct Fire Weapon Vehicle	N/A		Feb 09	N/A	
	Ambulance Vehicle	N/A		Feb 09	N/A	
	Air Defence Variant	N/A		Oct 10	N/A	
Preliminary	Troop Vehicle	Oct 99		Oct 99	0	

Design	Assault Pioneer Vehicle	Nov 99		Feb 00	3	
	Command Vehicle	Oct 99		Oct 99	0	
	Mortar Vehicle	May 03		Mar 03	(2)	
	Direct Fire Weapon Vehicle	May 03		Mar 03	(2)	
	Ambulance Vehicle	Jul 03		May 03	(2)	
	Air Defence Variant	April 10		Dec 09	(4)	
Critical Design	Troop Vehicle System Verification Review	Oct 02		Sep 02	(1)	
	Assault Pioneer Vehicle Initial Production Vehicle Review	Oct 04		Dec 06	26	1
	Command Vehicle Initial Production Vehicle Review	Oct 04		Mar 06	17	
	Mortar Vehicle Initial Production Vehicle Review	Apr 06		May 07	13	
	Direct Fire Weapon Vehicle Initial Production Vehicle Review	Apr 06		Apr 07	12	
	Ambulance Vehicle System Verification Review	Oct 05		Feb 07	16	
	Air Defence Variant Initial Production Vehicle Review	**Sep 11**		**Aug 11**	**(1)**	

Notes	
1	Initial testing of the first variant revealed a number of deficiencies against the specification that required rectification and design changes prior to acceptance and production. This had a consequential effect on the system and design review progress for the subsequent variants. As a result additional testing was required which impacted on completing critical design review and contractor test and evaluation.

3.2 Contractor Test and Evaluation Progress

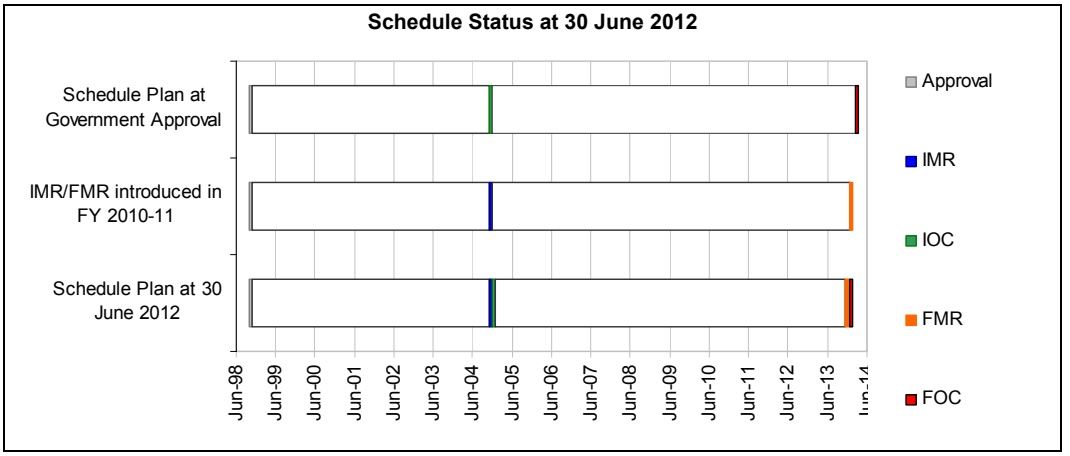
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Troop Vehicle	Jun 04		Dec 04	6	
	Command Vehicle	Sep 04		Mar 06	18	
	Assault Pioneer Vehicle	Oct 04		Dec 06	26	
	Mortar Vehicle	Apr 06		May 07	13	
	Direct Fire Weapon Vehicle	Apr 06		Apr 07	12	
	Ambulance Vehicle	Aug 07		Feb 08	6	
	Air Defence Vehicle	Sep 11		**Jul 11**	**(2)**	
Acceptance	All PP1 vehicles except Ambulance	Jun 06		Jul 07	13	
	PP1 – Ambulance	Jul 07		May 08	10	
	Troop Vehicle	May 06		Jun 09	37	1
	Command Vehicle	Jul 06		Jun 09	35	
	Assault Pioneer Vehicle	Jan 07		Jun 09	29	
	Mortar Vehicle	May 07		Jun 09	25	
	Direct Fire Weapon Vehicle	Mar 07		Jun 09	27	
	Ambulance Vehicle	Jul 07		Jun 09	23	
	Air Defence Vehicle	Apr 12		Apr 12	0	

Notes	
1	Additional reviews and testing requirements impacted the ability of Thales to conduct Production Acceptance Testing and Evaluation in the original timeframe. The situation was also impacted by the

	priority to support vehicles deployed on operations. Technical issues that resulted in design changes impacted on the ability to finalise Production and Acceptance Testing and Evaluation.

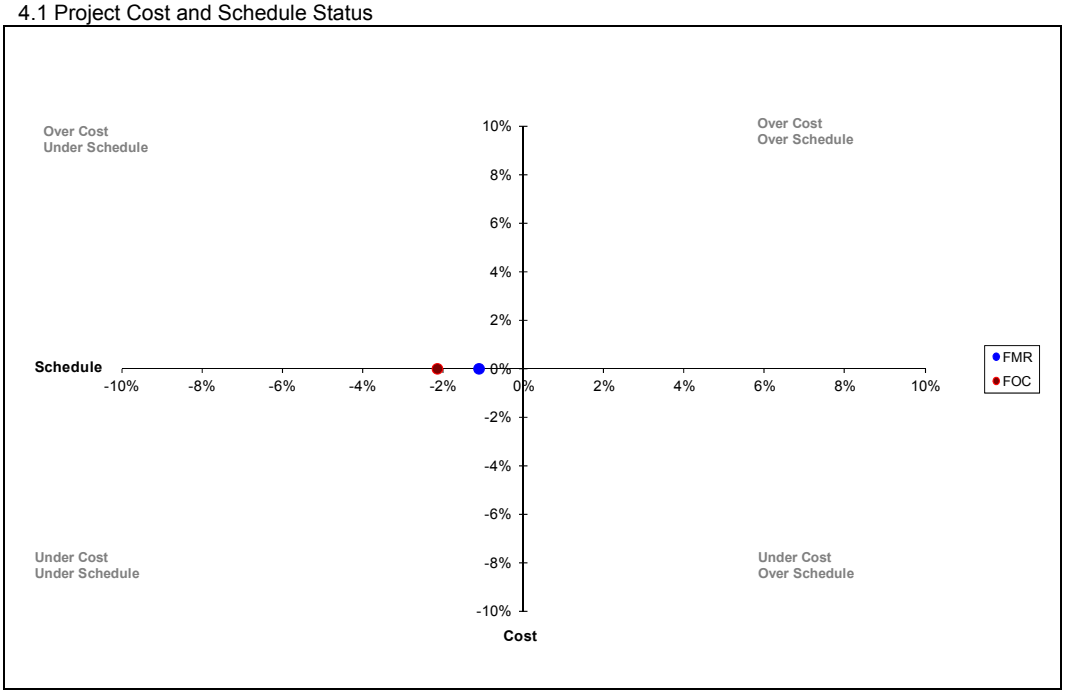
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Dec 04	N/A	IMR was achieved in December 2004 when commencement of delivery of full rate of production for Production Period 1 occurred.
Initial Operational Capability (IOC) - PP1	N/A	Dec 04	N/A	IOC was achieved in December 2004 when commencement of delivery of full rate of production for Production Period 1 occurred.
Final Operational Capability (FOC) - PP1	Oct 07	Nov 10	37	Delays in the acquisition and installation of communications harness equipment (SOTASip) resulted in revised FOC dates for PP1 (Ambulance Variant only) and PP2, as vehicles are being retrofitted before issue to Army.
Initial Operational Capability (IOC) - PP2	Jul 08	Nov 08	4	This was due to the restructure of Army under Enhanced Land Force not fully completed and the unavailability of the communications harness. Army have accepted the initial vehicles without the communications capability.
Final Operational Capability (FOC) - PP2	Apr 09	Nov 10	19	Delays in the acquisition and installation of communications harness equipment (SOTASip) resulted in revised FOC dates for PP1 (Ambulance Variant only) and PP2, as vehicles are being retrofitted before issue to Army.
Initial Operational Capability (IOC) - PP3	Oct 11	Oct 11	0	**This milestone is no longer being tracked due to a change in policy that has resulted in there no longer being multiple IOCs.**
Final Operational Capability (FOC) - PP3	Apr 12	Mar 13	11	This variance is due to clarification of the requirements in reaching FOC. FOC will be achieved when the final subset of PP3 vehicles will be operationally employed by Army.
Initial Operational Capability (IOC) - PP4	Jul 12	Jul 12	0	IOC will be achieved when the first subset of LAND 116 PP4 vehicles will be operationally employed by Army.
Final Materiel Release (FMR)	Feb 14	**Dec 13**	**(2)**	Completion of delivery of supplies listed in the Projects MAA at section 4 – Supplies, to the Customer
Final Operational Capability (FOC) - PP4	Apr 14	**Dec 13**	**(4)**	FOC will be achieved when the final subset of PP4 vehicles will be operationally employed by Army.



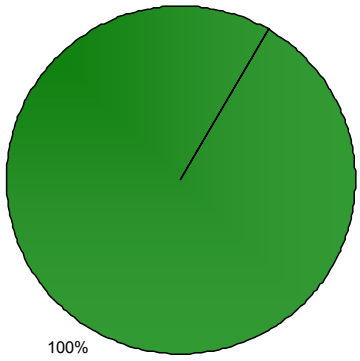
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	**Green:** The Project is currently meeting capability requirements as expressed in the suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities.
	Amber: N/A
	Red: N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the issue of PP3 vehicles to Army will be affected by delays in the processing of Engineering Change Proposals leading to an impact on cost and schedule.	**This risk has been retired by the Project due to the delivery of all PP3 vehicles.**
There is a chance that the specifications of the Protected Mobility Air Defence Variant will be affected by changes to current Ground Based Air Defence doctrine during design and development leading to an impact on schedule and performance.	**This risk has been retired by the Project due to the acceptance of the Air Defence Variant.**
There is a chance that the delivery of Protected Mobility Vehicle to the Commonwealth will be affected by overseas sales leading to an impact on schedule.	**This risk has been retired by the Project.**
There is a chance that achievement of the Detailed Design for the ECA solution will be delayed due to unforseen delays in the completion of design, development and verification activities leading to an impact on schedule.	Engage key stakeholders (Commonwealth and contractor) on a regular basis to ensure early identification of problem areas, and to develop mitigating strategies for reducing time delays. **This risk has been reassessed by the Project and is now rated as a moderate risk.**
There is a chance that the planned draw down of staff due to the upcoming project closure in **2014** will not align with the actual work required to complete the outstanding project activities leading to an impact on schedule.	**This risk has been reassessed by the Project and is now rated as a moderate risk.**
There is a chance that fitment of the ECA buttons to the PMV will be affected by vehicle availability impacting on the Project's scheduled completion date.	Liaise with Contractor and Army to establish fitment priorities and schedule.

Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
There is a chance that the External Composite Armour (ECA) production, will be affected by delays in Detailed Design Review (DDR) and implementation delays leading to an impact on schedule.	**On going engagement with Thales for resolution of outstanding issues. Engage Capability Development Group to determine number of kits and Army Registration Numbers to be fitted for ECA.**
There is a chance that the availability of vehicles will affect the installation of SOTAS to vehicles leading to an impact on schedule.	**Conduct additional fitment of SOTAS utilising the support services contract. Critically manage the rollout out SOTAS in accordance with the Capability Managers priorities.**

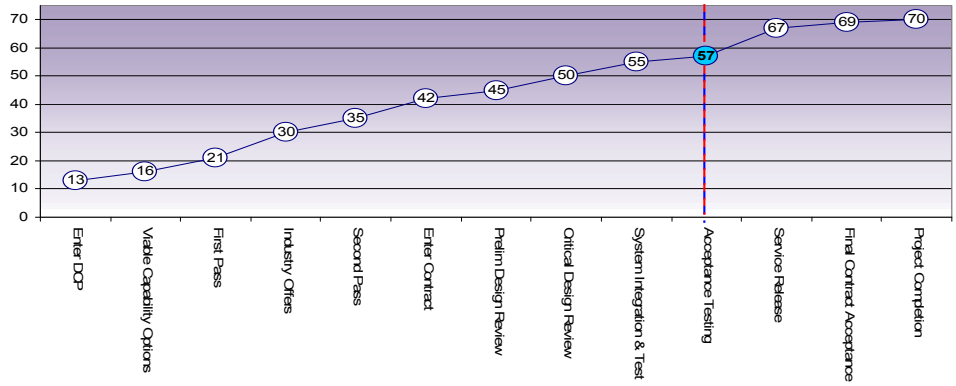
6.2 Major Project Issues

Description	Remedial Action
There is a backlog of engineering changes such as the design and integration of blackout curtains, due to the Commonwealth and Thales reprioritising engineering effort to higher priority operationally focused tasks. This backlog needs to be addressed in order to baseline the PMVs configuration.	The application of a more active management approach and the commitment of additional resources by the Commonwealth and Thales in an effort to reduce the backlog.
The achievement of Detailed Design for the ECA solution has taken longer than anticipated due to the requirement for Thales to readdress mass and temperature aspects of their proposed solution.	Engage stakeholders on a regular basis and ensure on-going clarity regarding system requirements.
Issuing of PMVs to the Army has been impacted by the availability of communications harnesses.	The SOTASip communications harness and headsets are currently being introduced into service.
The PMV is not able to be certified for towing as per the value for money guidelines. This has an impact on the PP3 requirement to procure a PMV trailer.	**It will be recommended to Government that the trailer and towing requirement be removed from the project scope.**

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	8	8	8	8	9	8	8	57
Acceptance Testing	Project Status	8	8	8	8	9	8	8	57
	Explanation	The maturity score has not changed as it is now based on PP3 which includes development of a Protected Mobility Vehicle trailer, the replacement communications harness and **PP4 which includes** acceptance testing.							



2010-11 DMO MPR Status - - - -	2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
In the early planning phases of the project, the operational concept and functional performance requirements were not clearly defined, making it difficult to understand and undertake appropriate cost-capability trade-offs.	Requirements Management
Cost Estimating – there was a lack of industry capability to provide adequate cost estimates and inability by Defence to evaluate the validity of the cost data.	Contract Management
Testing program – significant contingency planning should be conducted for compliance testing of a new capability.	First of Type Equipment

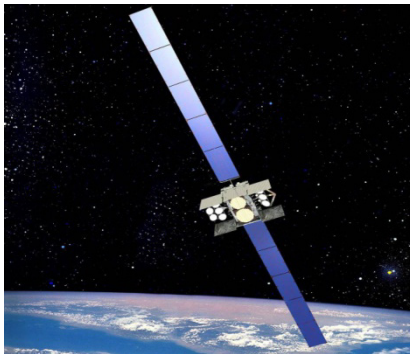
Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	MAJGEN Grant Cavenagh
Branch Head	BRIG David Shields
Project Director	Mr James Palmer
Project Manager	Mr Steven Brown

Project Data Summary Sheet[246]

Project Name	**NEXT GENERATION SATCOM CAPABILITY**
Project Number	**JP 2008 Phase 4**
Capability Type	New
Service	Joint Services
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Sep 07
Total Approved Budget (Current)	**$861.1m**
2011-12 Budget	**$97.7m**
Project Stage	System Integration and Test
Complexity	ACAT II



Section 1 – Project Summary

1.1 Project Description

The JP 2008 Phase 4 project seeks to deliver high priority components of the next generation (NEXTGEN) satellite communication (SATCOM) system that will support the Australian Defence Force (ADF) from 2008 onwards. The NEXTGEN SATCOM system will introduce a flexible and sustainable SATCOM capability that supports a network centric ADF operating independently or as part of a coalition.

1.2 Current Status

Cost Performance

As at 30 June 2012, project JP 2008 Phase 4 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

The milestones achieved so far include: Wideband Global SATCOM (WGS) System Service Initial Operational Capability (IOC); Interim Anchor Capability (backhaul); Situational Awareness Tools & Infrastructure training; Interim Anchoring Station (IAS) - West and establish WGS Training for ADF personnel. Interim Anchor Capability Full Operating Capability (FOC) (Backhaul & Aust IA Station(s)) is **37 months** behind schedule. No change is anticipated to the Project Completion Date.

Materiel Capability Performance

The first **three** satellites **are meeting** their operational requirements. Australia used United States (US) infrastructure from June 2008 via the Simpson Trunk (undersea cables) to gain access to the first WGS satellites. This capability was augmented incrementally through the placement of Australian equipment in US satellite anchor stations (offshore anchoring) situated in Hawaii and Landstuhl (Germany) to support increased levels of capability. The mature offshore anchoring capability was set to work October 2009. The IAS – West has been set to work and is available for operational use.

[246] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

1.3 Project Context

Project	Explanation
Background	In 2007 the Australian Government considered a range of options to deliver a wideband satellite communications capability for the ADF. The US had an approved program for a five wideband satellite constellation, and in early 2007 offered the Commonwealth the opportunity of partnering in the program on the basis that the Commonwealth would fund the production of a sixth WGS satellite in return for a share of the services provided by the expanded constellation of six WGS Satellites (which is approximately 10% of the overall program). Negotiations of the WGS Memorandum of Understanding (MOU) between the Commonwealth and the US Government began in March 2007, and in September 2007 the JP 2008 Phase 4 project received combined First and Second Pass Government Approval for the procurement of the ADF's NEXTGEN SATCOM capability. The WGS MOU was signed in November 2007 at the Australian Embassy in Washington DC enabling the US Government to exercise the contract option for WGS6 on 1 December 2007. WGS1 with a footprint over the Pacific Ocean and Australia has been operational since early 2008, with progressive launches culminating with the sixth satellite (WGS6) becoming operational in 2013. Outside the MOU, the project is delivering interim anchoring capability to provide access to the WGS satellite constellation from Australia's eastern and western seaboards. This will be achieved through the delivery of ground stations in Western Australia and at HMAS Harman in the Australian Capital Territory. Complimenting the onshore anchoring capability is an offshore anchoring capability that is now operational in Hawaii and Germany. The project is also managing the provision of training of ADF personnel to operate the WGS system through a Foreign Military Sales (FMS) Case with the US Government to enable ADF personnel to operate the WGS system as part of the integrated US Wideband Satellite Communications Operations Centres (WSOC).
Uniqueness	The uniqueness of this project in the main relates to the acquisition strategy that governs the ADF's access to this satellite communications technology. The WGS space segment component of the project will be delivered by the Commonwealth's participation in the US WGS program under a dependable undertaking. Under this arrangement the US Government will manage the contract with Boeing for all satellite production including WGS6, which is being funded by Australia. The acquisition of the WGS constellation is governed by two contracts, Block I for satellites WGS1, WGS2 and WGS3, and Block II for satellites WGS4, WGS5 and WGS6. The steady-state provision of services will occur once WGS6 is operational under the existing MOU. The MOU agreement between the Commonwealth and US Government invokes the 'Exchange of Notes constituting an Agreement between the Government of the United States of America and the Government of Australia Concerning Certain Mutual Defence Commitments' (known as the Chapeau Defence Agreement) concerning liability and use and disclosure of information.

Major Challenges	A major challenge of this program is the execution of the program under a dependable undertaking where the US Government is the prime contractor. Under the terms of the MOU, the Commonwealth has no legal relationship with the satellite provider (Boeing), and receives only limited insight into the program constrained by pre-existing commercial terms within the MOU and International Traffic in Arms Regulations (ITAR). Although the agreement with the US Government is through a joint production operations and support MOU, none of the WGS satellites and associated supplies will be owned by the Commonwealth. Nevertheless, benefits of this capability are realised through access to a six satellite constellation and the embedding of ADF personnel within the WSOC, which in effect allows the ADF to gain further WGS operational knowledge and realise the full capability potential of the WGS system. Other challenges relate to the equitability regime that underpins the MOU. In this context the project is exposed to a share of the risks and rewards of the program. The capability advantages are underpinned by early satellite access and worldwide global coverage. The risk regime requires the Commonwealth to share the risk of satellite failures and schedule overruns. To control risk exposure the Commonwealth negotiated into the MOU a financial ceiling cap which is designed to ensure the Commonwealth isn't exposed to cost increases above the cost ceiling. To manage the technical and commercial complexities of the WGS program, a number of important management forums have been established to ensure the Commonwealth has a sufficient level of insight into the WGS program. The most important of these being the bi-annual Program Status Review and a Senior Executive Steering Group that meets each year to provide governance over the partnership. The management framework is operating effectively and the partnership is successfully working as an integrated project team. Considerable acceleration of the standard acquisition cycle has meant the project continues to refine project management documentation, relevant to the nature of the agreements governing project execution.
Other Current Projects/Sub-Projects	**JP 2008 Ph 3F ADF SATCOM Terrestrial Enhancements:** This project will provide the mature Australian western seaboard anchoring capability for the WGS constellation.
	JP 2008 Ph 5A Indian Ocean Region UHF SATCOM: This project will provide the ADF with twenty 25kHz UHF SATCOM channels on an Intelsat satellite to provide coverage of the Indian Ocean Region.
	JP 2008 Phase 3E Advanced SATCOM Terrestrial Infrastructure System: This project provides the supporting ground infrastructure for Satellite Communications including UHF, X and Ka band communication services.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Sep 07	Original Approved		884.9	
Jul 10	Price Indexation		132.4	1
Jun 12	Exchange Variation		**(156.2)**	
Jun 12	**Total Budget**		**861.1**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – WGS MOU	**(357.8)**		
	Contract Expenditure – TBN	**(10.7)**		
	Other Contract Payments / Internal Expenses	**(18.8)**		2
			(387.3)	
FY to Jun 12	Contract Expenditure – WGS MOU	**(76.5)**		
	Contract Expenditure – TBN	**(1.7)**		
	Other Contract Payments / Internal Expenses	**(2.4)**		2
			(80.6)	
Jun 12	**Total Expenditure**		**(467.9)**	
Jun 12	**Remaining Budget**		**393.2**	

Notes	
1	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $107.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $25.1m having been applied to the remaining life of the project.
2	Other expenditure comprises: operating expenditure, other minor capital expenditure not attributable to the aforementioned top two contracts and minor contract expenditure.

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**Phase 4 achieved ROMAN actuals of 83% and accruals of 93%. The underspend relates to Overseas Industry for delays with the WGS program worth $1.3m, Australian Industry for $0.1m worth of delays against various milestones, $0.2m worth of invoices for work complete not invoiced with Chief Information Officer Group and $5.2m worth of planned activities slipped out to FY 12/13. $9.8m against Brought Forward relates to a strategic opportunity brought forward and achieved in accruals but not reflected against Project actuals for FY11/12. Accruals are reordered at a divisional level not Project. There was $0.5m in cost saving achieved on WGS payments.**
		(1.3)	Overseas Industry	
		(5.5)	Local Industry	
		(9.8)	Brought Forward	
		(0.5)	Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
97.7	**80.6**	**(17.1)**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
US Government	Nov 07	866.2	866.2	Firm	MOU Agreement	
The Bridge Network	Nov 08	11.2	**12.7**	Firm	ASDEFCON (Complex)	

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
US Government	1	1	WGS6	1
The Bridge Network	2	2	Ground Station	2

Major equipment received and quantities to 30 Jun 12
Four satellites successfully launched and in operation.

Notes	
1	The MOU will provide access to a constellation of six satellites; however, Australia's contribution is limited to funding the production of WGS6 and associated supplies.
2	The quantity of two Ground Stations comprises single separate ground stations on the eastern and western seaboard.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Design	WGS6 and WGS Constellation	N/A	N/A	N/A	N/A	1
Mission System Review	Interim Anchoring Mission System Review	Dec 08	N/A	Nov 09	11	2

Notes	
1	The MOU construct does not provide the project with insight into the design review process or design data. A Monthly Status Report is provided to the Commonwealth detailing only summary high level progress status.
2	The Interim Anchoring Mission System Review (MSR) delay was attributed to the unfamiliarity of the contractor with Defence contract requirements in relation to documentation and process. Through a contracted requirement, the Contractor experienced difficulties in meeting the quality requirements of the contract resulting in a requirement for re-work to be performed by the contractor. MSR was essentially a combined Preliminary Design Review, System Requirement Review and Critical Design Review that was expected to span three days.

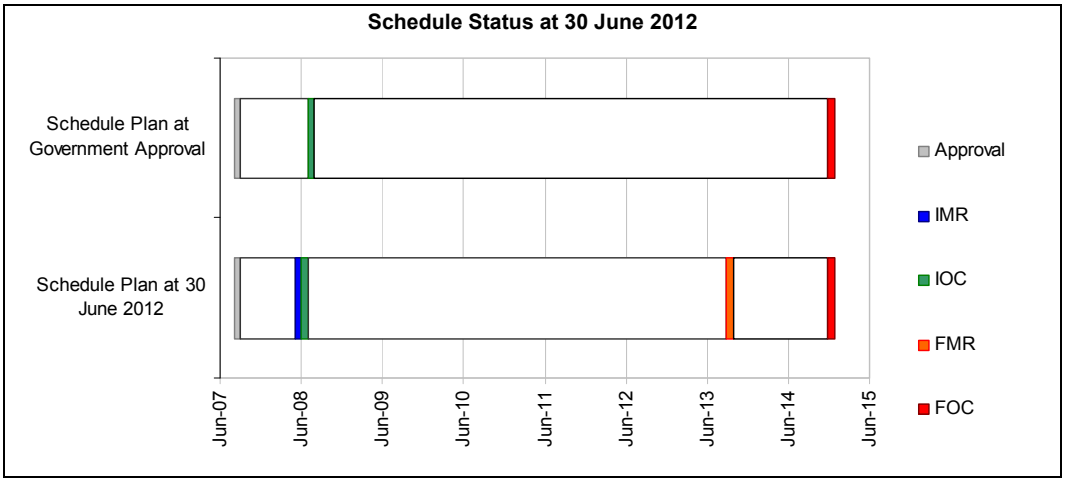
3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
US Government Acceptance	WGS6	Nov 13	N/A	Nov 13	0	
System Integration	WGS6	Sep 11	N/A	Sep 11	0	
Test Readiness Review	IAS – East	Jul 09	N/A	Jun 11	23	1
	IAS – West	Jul 09	N/A	Mar 10	8	1
Acceptance	IAS – East	Sep 09	N/A	**Oct 12**	**37**	**3, 4**
	IAS – West	Sep 09	N/A	Aug 10	11	2

Notes	
1	Test Readiness Review (TRR) and Acceptance milestones for the IAS have continued to slip over the course of 2010-11. This is primarily due to the determination that the configuration of both Anchor Stations was sufficiently different to warrant a secondary certification event for IAS East. The achievement of IAS East TRR has involved a more extensive and demanding level of engineering process than originally anticipated by the project office and has required that the Interim Anchoring contract be modified to reflect increases in test scope.
2	IAS-West Acceptance occurred 11 months beyond the original planned date because the Acceptance Test Report was late due to delays associated with the issue of the WGS Certification, letter of certification and report. Several contractor generated reiterations required prior to Verification Cross Reference Matrix and Acceptance Test Report acceptance, were also delayed.
3	**Delays to IAS East acceptance have occurred due initially to delays in WGS certification and Engineering Change Proposal this was then compounded by Commonwealths delay due to engineering workforce issues. Further to this there have been delays in activating a maintenance support contractor in the East.**
4	**Acceptance of East requires Engineering Change Proposal (ECP) approval and subsequent contractor work was rebaselined in March 2012.**

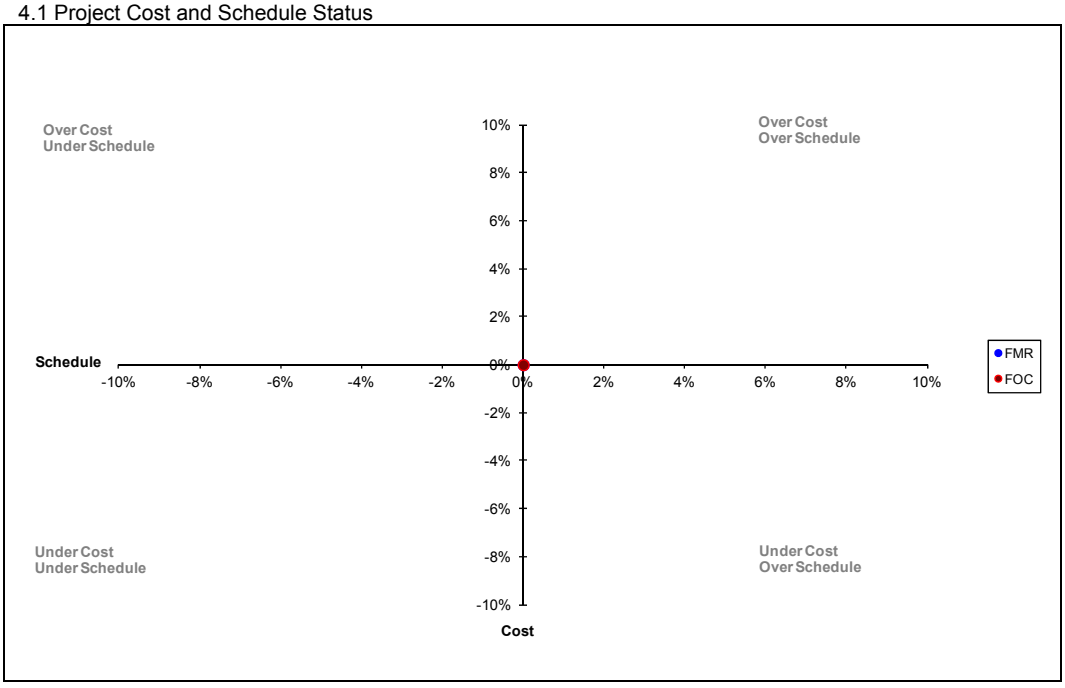
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
WGS - Initial Materiel Release (IMR)	N/A	Jun 08	N/A	
WGS Service Initial Operational Capability (IOC)	Aug 08	Jun 08	(2)	Achieved ahead of schedule upon activation of WGS1.
MR2 – Hawaii & Germany offshore/Backhaul Anchoring Stations realised to CIOG for operational use	**Nov 09**	**Nov 09**	**0**	
MR3 – AUST West IAS	**Nov 10**	**Nov 10**	**0**	
MR4 – AUST East IAS	**Apr 11 – Jun 11**	**Oct 12**	**16**	**Delays to IAS East acceptance have occurred due initially to delays in WGS certification and ECPs, this was then compounded by Commonwealths delay due to engineering workforce issues. Further to this there have been delays in activating a maintenance support contractor in the East.**
MR5 – Activation of 104E Slot	**Mar 12 – May 12**	**Jul 12**	**2**	WGS4 Activated East Indian Ocean Region (EIOR) slot as advised by US.
Final Materiel Release (FMR) US Airforce acceptance of WGS6	**Jul 13 – Sep 13**	**Sep 13**	**0**	
Final Operational Capability (FOC) Operational acceptance of WGS6	**Oct 14 – Dec 14**	**Dec 14**	**0**	



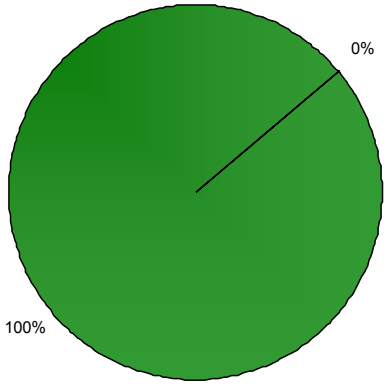
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	**Green:** Technical performance of WGS6 is tracking well against the US Government's program. The requirement for Offshore anchoring support is also formalised, via the WGS MOU, and delivering capability to the ADF.
	Amber: N/A
	Red: N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a risk that activation of Satellite orbital slots will not be achieved.	**This risk has reduced to medium as satellite is in the preferred slot and under test.**
There is a risk of not having access to Situational Awareness and Planning Tools (SAPT) which will prevent Australia effectively coordinating and planning access to the WGS constellation.	**SAPT has been fully released for Australian use.** **This risk is now retired.**
There is a risk that the remote monitoring and control system is not available in time to launch the WGS satellite into its orbital slot.	**Remote Monitoring and Control Equipment has now been installed and tested and will become operational in August 2012. This risk has been reduced to low and will be retired in August 2012.**
Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
N/A	N/A

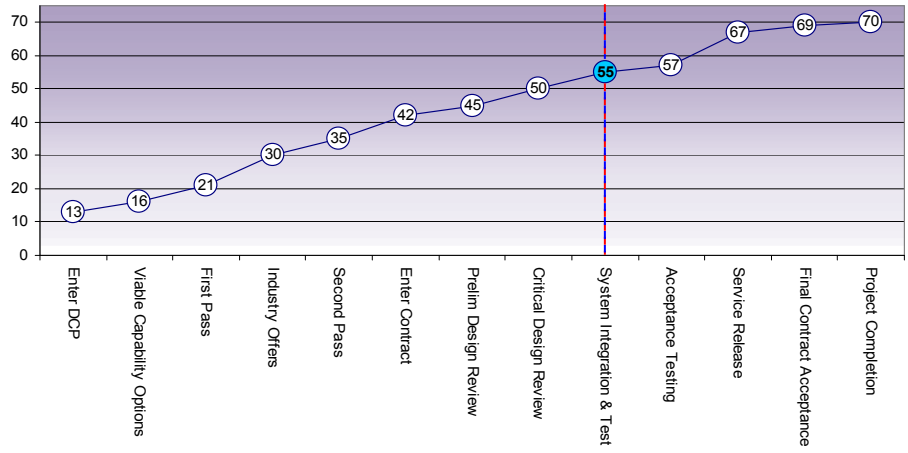
6.2 Major Project Issues

Description	Remedial Action
Failure of IAS to be delivered to the original schedule.	The project fast tracked and dimensioned the offshore anchoring capability to support expected operational traffic as a means to mitigate operational impact of the schedule delay for interim anchoring. Offshore anchoring capability has now been established in Hawaii and Germany supporting the required operational traffic. This capability may be increased once an assessment of interim anchoring FOC is finalised.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	8	7	8	8	8	8	8	55
System Integration and Test	Project Status	6	9	10	8	8	8	6	55
	Explanation	• **Schedule:** The difference is a result of delays specifically associated with the Certification and subsequent FOC for Interim Anchoring Capability - now scheduled for **December 2012.** • **Cost:** The main cost component of the project, the WGS6 satellite, is more than half complete and is forecast to be produced under budget. • **Requirement:** Three satellites are in orbit and all are being used operationally providing a known understanding of the capability to be provided by the constellation. • **Operations and Support:** Interim Anchoring will enter service and provide operational capability later than expected.							



2010-11 DMO MPR Status - - - - - 2011-12 DMO MPR Status - - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
DMO needs to work closely with Australian Small to Medium Enterprise (SME) companies to ensure the SME resourcing effort and engineering demands in executing Defence contracts is not underestimated.	Resourcing
Considerable acceleration of the acquisition cycle for the WGS program necessitates a strengthening of the governance process to ensure lines of authority and responsibility are clear in the formation in the definition of business need and option analysis.	Governance

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	Mr Michael Aylward
Branch Head	Mr Ivan Zlabur
Project Director/Manager	Mr Greg McKinnon

Project Data Summary Sheet[247]

Project Name	**ANZAC ANTI-SHIP MISSILE DEFENCE**
Project Number	**SEA 1448 Phase 2B**
Capability Type	Upgrade
Service	Royal Australian Navy
Government 1st Pass Approval	Nov 03
Government 2nd Pass Approval	Sep 05
Total Approved Budget (Current)	**$675.8m**
2011-12 Budget	**$68.7m**
Project Stage	Acceptance Testing
Complexity	ACAT I

Section 1 – Project Summary

1.1 Project Description

The Anti-Ship Missile Defence (ASMD) upgrade SEA1448 Phase 2 project will provide the ANZAC Class Frigates with an enhanced level of self-defence against modern anti-ship missiles.

There are two sub-phases of SEA1448 Phase 2. Phase 2B of the ASMD Project, will introduce an indigenous, leading edge technology, phased array radar (CEAFAR) and missile illuminator (CEAMOUNT) – collectively referred to as the Phased Array Radar (PAR) System. The PAR System delivers enhanced target detection and tracking that allows Evolved Sea Sparrow Missiles (ESSM) to engage multiple targets simultaneously. A new dual ship-set I-Band Navigation radar will coincidentally be provided under this Phase to replace the navigation function performed by the Target Indication Radar (TIR), at the same time replacing the obsolescent Krupp Atlas 9600.

1.2 Current Status

This **Project** has been a Project of Concern since June 2008, **but was removed in November 2011 as part of the Real Cost Increase (RCI) decision made by Government in November 2011.**

Cost Performance

As at 30 June 2012, project SEA 1448 Phase 2B has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

Based on the revised acquisition strategy approved by Government in July 2009, the systems being delivered in Phase 2B are currently on schedule. The overall variance from the original Second Pass (eight ship) Government approval of the Project in September 2005 is 19 months. **With the RCI for Phase 2B approved for the follow on ships 2-8 in November 2011, there is a 10 month variance to the delivery**

[247] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

of the final capability as advised in the 2009 Cabinet Submission. This equates to a 55 month Variance to the original approvals for this Phase of the Project.
Materiel Capability Performance **Initial Material release was claimed for Stage 1 Capability on HMAS Perth on 24 June 2011. The Chief of Navy formally provided initial operational release (IOR) for ASMD upgrade capability delivered to HMAS *Perth* and its associated support systems in 16 August 2011. The Project is continuing to progress Stage 2 Capability and is on track.**

1.3 Project Context

Project	Explanation
Background	The need for an ASMD capability in the Royal Australian Navy's (RAN) surface fleet was first foreshadowed in the 2000 Defence White Paper. SEA 1448 Phase 2B is the final Phase of the ANZAC ASMD Program, where the addition to the Class of the phased array radar technology is being undertaken by the Australian Company CEA Technologies and the overall integration into the ANZAC Class is being performed by the ANZAC Alliance (Commonwealth plus BAE Systems (previously Tenix) and Saab Systems). SEA 1448 Phase 2B was approved by Government in September 2005 for $404m. SEA 1448 Phases 2A (the initial phase of the ASMD Project which is procuring the combat management system hardware and the infra-red search and track capability) and 2B are being managed as a confederated ASMD Project due to their common systems engineering disciplines, schedules and risks. Phase 2A is a low risk component whilst it remains part of the confederated project and there are no Phase 2A risks that will migrate to the ASMD Project as enterprise risk. Due to its leading edge and developmental technology, Phase 2B is a high risk phase either as a stand-alone component or as part of the confederated ASMD Project, and these risks do migrate as enterprise risks to the confederated ASMD Project. Originally planned for installation into all eight ANZAC Class ships under a single contract, a further review in 2007 of the technical risks associated with the introduction of the leading edge radar led Government in August 2009 to revise the acquisition strategy to a single ship installation. This strategy allows the project to prove this capability at sea before seeking Government approval to commence installation into subsequent ships. The lead ship, HMAS *Perth,* successfully underwent acceptance testing between October 2010 and June 2011 with the Chief of Navy **accepting** this initial operational capability in August 2011.
Uniqueness	The phased array radar component of the Anti-Ship Missile Defence Project is highly developmental and has not previously been fielded in this form before, although the system components are fourth generation derivatives of fielded CEA systems. The RAN is the first to operate a ship with the Australian designed and manufactured CEA Technologies low power active PAR system.
Major Challenges	During 2007, it was determined from system engineering reviews and DSTO modelling and analysis that the integration of the phased array radar with the existing ANZAC Class radar systems suggested that existing financial provisions were insufficient to deliver an eight ship Program without a real cost increase. As a direct result, Defence reviewed the acquisition strategy for the Project and modified it to a single ship installation that would need to prove the capability at sea before consideration was given by Government to install into the remaining ships within the Class. Government agreed to this updated strategy in July 2009.
Other Current Projects/Sub-Projects	**SEA 1448 Phase 2A** of the ASMD Project is to upgrade all eight of the ANZAC Class Ship's existing ANZAC Class Combat Management Systems (CMS) and fire control systems, and install an Infra-Red Search and Track (IRST) System which will provide improved detection of low level aircraft and anti-ship missiles when the ship is close to land.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1448 Phase 2A **ANZAC ASMD**	This is the initial phase of the ASMD Project that will upgrade all eight of the ANZAC Class Ship's existing ANZAC Class Combat Management Systems (CMS) and fire control systems, and install an Infra-Red Search and Track (IRST) System which will provide improved detection of low level aircraft and anti-ship missiles when the ship is close to land.	SEA 1448 Phases 2A and 2B are being managed as a confederated ASMD Project due to their common systems engineering disciplines, schedules and risks. As a result, any delays in delivery of Phase 2B will drive delays with Phase 2A, but as Phase 2A is a low risk Project the risk to delays from Phase 2A to Phase 2B is assessed as minimal.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Sep 05	Original Approved		248.8	
Mar 06	Real Variation – Transfers	155.4		1
May 06	Real Variation – Transfers	(6.7)		2
Nov 11	**Real Variation – Scope**	**214.7**		3
			363.4	
Jul 10	Price Indexation		**76.0**	4
Jun 12	Exchange Variation		**(12.4)**	
Jun 12	**Total Budget**		**675.8**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – BAE Systems Australia	**(51.5)**		
	Contract Expenditure – SAAB Systems Pty Ltd	**(54.6)**		
	Contract Expenditure – CEA Technologies (P3 Contract)	**(69.7)**		5
	Contract Expenditure – CEA Technologies (PAR Production)	**(92.7)**		6
	Contract Expenditure – ICWI Membership	**(8.7)**		
	Other Contract Payments / Internal Expenses	**(5.5)**		7
			(282.7)	
FY to Jun 12	Contract Expenditure – BAE Systems Australia	**(11.3)**		
	Contract Expenditure – SAAB Systems Pty Ltd	**(15.0)**		
	Contract Expenditure – CEA Technologies (PAR Production)	**(27.2)**		**6**
	Contract Expenditure – ICWI Membership	**(3.6)**		
	Other Contract Payments / Internal Expenses	**(0.6)**		7
			(57.7)	
Jun 12	**Total Expenditure**		**(340.4)**	
Jun 12	**Remaining Budget**		**335.4**	

Notes	
1	$155.4m transferred from SEA448 PH 2A after Government agreed that initial Very Short Range Air Defence (VSRAD) was to be replaced with the phased array radar system from CEA.
2	Transfer to DSTO (Maritime Operations Division) for phased array radar risk mitigation activities in line with original Government approval in September 2005.
3	**Real Cost increase (RCI) of $214.7m approved for the follow on ships 2-8 in November 2011.**
4	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $71m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $5.1m having been applied to the remaining life of the project.
5	(P3 = Preliminary Phased Array Radar Program); This contract was officially closed in April 2010 and was aimed at development and initial production of the first phased array radar system.
6	This is the current production contract for the delivery of the first phased array radar system into HMAS Perth (lead ship). This contract is a single ship contract in accordance with the revised acquisition strategy, but has options that can be activated by the Commonwealth for an additional seven ship sets builds if Government approves this post successful at sea testing of the lead ship. In order to manage acquisition obsolescence of phased array radar components and retention of the strategic workforce related to the phased array radar, this contract also includes forward component buys.
7	Other expenditure comprises: operating expenditure, short term contractors, consultants and other capital expenditure not attributable to the aforementioned top five contracts and minor contract expenditure.

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The forecasted underspend is primarily due to the slippage of the PAR spares that are now scheduled to be delivered against ships 4 to 5 in 2015 and delays in progressing approval of the material and prefabrication for ship 2. With the recent Government approval to progress the upgrade into Ships 2-8 and real cost increase of $215m, the project will rephase its estimates during the upcoming AE's exercise on the new approved schedules from Industry.**
			Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(11.0)	Commonwealth Delays	
68.7	**57.7**	**(11.0)**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
BAE Systems Australia	Jul 05	2.1	57.7	Variable	Alliance	
SAAB Systems Pty Ltd	Jul 05	3.1	67.0	Variable	Alliance	
CEA Technologies P3 Contract	Dec 05	8.9	69.6	Variable	ASDEFCON	
CEA Technologies PAR Production Contact	Dec 08	16.0	**161.5**	Variable	ASDEFCON	
BAE Systems Australia	**Jan 12**	**164.9**	**164.9**	**Variable**	**Alliance**	

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
BAE Systems Australia		2	Ship 1 and land based test system	
SAAB Systems Pty Ltd		2	Ship 1 and land based test system.	

CEA Technologies P3 Contract	2	2	Phased array radar systems for Ship 1 and land based test system	1
CEA Technologies PAR Production Contact	1	**9**	Phased array radar systems for Ship 1 **- 8** and land based test system	2
BAE Systems Australia	**7**	**7**	**Ships 2-8 Installation**	
Major equipment received and quantities to 30 Jun 12				
Most Critical/Detailed (PAR) Design Reviews have been completed.				
Notes				
1	(P3 = Preliminary Phased Array Radar Program); This contract was officially closed in April 2010 and was aimed at development and initial production of the first phased array radar system.			
2	This is the current production contract for the delivery of the first phased array radar system into HMAS Perth (lead ship). This contract is a single ship contract in accordance with the acquisition strategy, but has options that can be activated by the Commonwealth for an additional seven ship sets builds if Government approves this post successful at sea testing of the lead ship. In order to manage acquisition obsolescence of phased array radar components and retention of the strategic workforce related to the phased array radar, this contract also includes forward component buys.			

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Mk3E Combat Management System/Phased Array Radar – Stage 1 (Requirements Review)	Mar 06		May 06	2	1
	Mk3E Combat Management System – Stage 2 (Requirements Review)	N/A		Aug 09	N/A	1
	Mk3E Combat Management System/Phased Array Radar – Stage 1 (Functional Review)	Jun 06		Aug 06	2	
Preliminary Design	Mk3E Combat Management System/Phased Array Radar Preliminary Design Review	Dec 06		Aug 07	8	1
	ASMD Shore Facilities (HMAS *Stirling*)	N/A		Aug 08	N/A	
Critical Design	Mk3E Combat Management System (Phased Array Radar integration) - Stage 1 Critical Design Review – Part 2	Dec 07		Aug 08	8	1
	Mk3E Combat Management System - Stage 2 Critical Design Review	Nov 10	Sep 11	**Sep 11**	10	2
	ASMD Shore Facilities (HMAS *Stirling*)	N/A		Dec 08	N/A	
	Phased Array Radar	Oct 07		Oct 07	0	
Notes						
1	Variance in design reviews is directly related to the change of acquisition strategy (movement from an eight ship program to a single ship program) or delay in initial contract award for phased array radar system.					

2	Variance in Stage 2 Critical Design Review (CDR) date has been as a result of delays in finalising Defence's requirements in the Software update. This was completed in April 2011 with CDR appropriately rescheduled. There is no impact to final Stage 2 software release date.

3.2 Contractor Test and Evaluation Progress

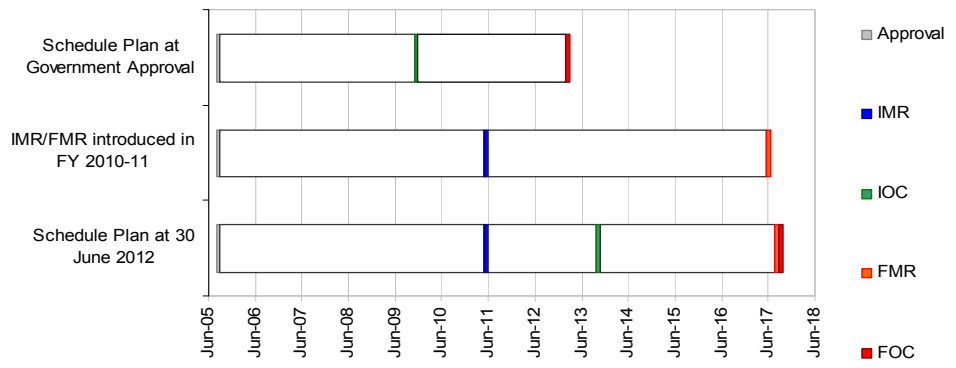
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Test Readiness Review	HMAS *Perth* with upgraded ASMD System (Mk3E Combat Management System/Phased Array Radar System/Navigation Radar System - Harbour Phase)	Dec 08	Aug 10	Aug 10	20	1
Acceptance (Initial Operational Capability)	HMAS *Perth* with upgraded ASMD System (Mk3E Combat Management System/Navigation Radar System)	Dec 09	**Nov 13**	**Nov 13**	47	**2**

Notes	
1	Variance in both the test readiness review and acceptance of the first upgraded ASMD ship is directly related to the change of acquisition strategy and movement from an eight ship program to a single ship program.
2	Initially the variance in the acceptance of the first upgraded ASMD ship is directly related to the change of acquisition strategy and movement from an eight ship program to a single ship program. As part of the RCI process it was agreed by **Navy, CDG and DMO to move IOC until after PAR had been proven against Super Sonic Targets.**

3.3 Progress Toward Materiel Release and Operational Capability Milestones

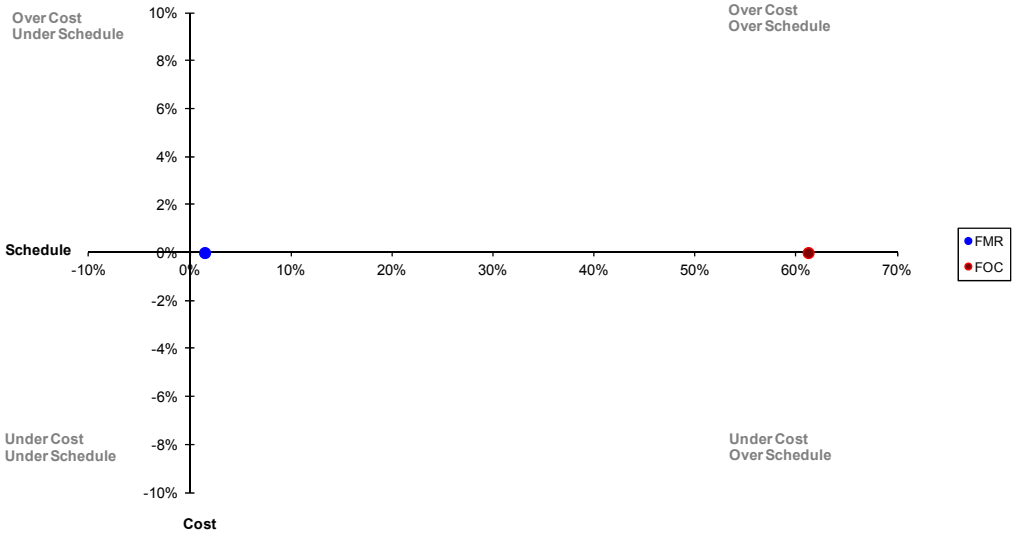
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Jun 11	N/A	
Initial Operational Capability (IOC)	Dec 09	**Nov 13**	**47**	**Variance is directly linked to updated Materiel Acquisition Agreement which moved IOC until after PAR had been proven against Super Sonic Targets.**
Final Materiel Release (FMR)	Jul 17	**Sep 17**	**2**	*Note **this milestone variation is due to approval of ships 2-8 by Government.***
Final Operational Capability (FOC)	Mar 13	**Oct 17**	**55**	Variance is directly linked to the change of acquisition strategy - movement from **a one + seven ship program to an eight ship program.**

Schedule Status at 30 June 2012



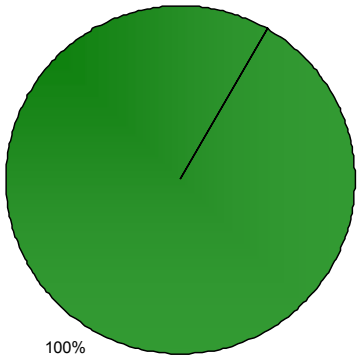
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	**Green:** Based on lead ship (HMAS *Perth*) successful acceptance testing and initial **operational release** being achieved in **August 2011**, the Project is currently meeting capability requirements as expressed in the suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities.
	Amber: N/A
	Red: N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the phased array radar will not meet the required functional performance specifications and its integration complexity into the upgraded ANZAC Combat Management System may be underestimated.	Project has developed a Confidence Level Demonstration Program that has been actively demonstrating the functional performance of the phased array radar since November 2007 utilising a land based test site that has been established at the CEA premises (Fyshwick, ACT). These tests continue to provide evidence that the phased array radar system is meeting the expected functional performance specifications and is able to integrate with the upgraded ANZAC Combat Management System. Successful completion of acceptance testing for HMAS *Perth* has seen the Stage 1 capability of the phased array radar technology achieve initial materiel certification; however this risk will not be retired until all capability is delivered (Stage 2 software update in 2013).
There is a chance that with the significant change in the technology levels being delivered under the ASMD Upgrade, stakeholder expectations may not be achieved.	Continuous engagement and education of stakeholders regarding the capability that will be delivered. In addition, a series of practical exercises for RAN operations crews in a specially built land based test site that simulates an upgraded ANZAC Ship operations room and all of the new systems being installed.
There is a chance that under the revised acquisition strategy of a lead ship fully tested before Government approves additional ships, that obsolescence of critical phased array radar components will occur.	Commonwealth is working to introduce a Contractor acquisition obsolescence monitoring program that advises of component obsolescence and any requirement to procure.
Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
There is a risk that indices used in the prime contract, particularly labour rates, may exceed current predictions.	**This risk is currently considered manageable, but is being monitored closely by the project. Commonwealth to work with industry to manage impacts of increased costs flow-on from increases in labour and overhead costs for all contracts associated with ASMD**.

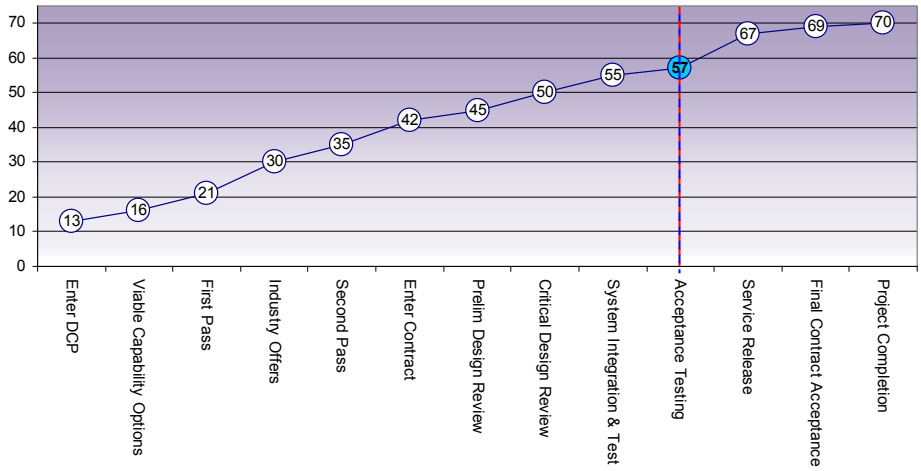
6.2 Major Project Issues

Description	Remedial Action
N/A	**N/A**

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	8	8	8	8	9	8	8	57
Acceptance Testing	Project Status	**7**	8	9	8	9	8	8	**57**
	Explanation	• **Schedule: Approval of the RCI entailed a modified path to IOC which includes additional testing, including Pacific Missile Range Facility participation, that wasn't previously required.** • **Requirement:** Based on the completion of this phase of testing and achievement of the initial materiel certification of the initial Stage 1 capability in June 2011, the benchmark maturity score was updated to reflect that testing continues to confirm the originally contracted requirements.							



2010-11 DMO MPR Status - - - -	2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Ensure that technically complex developmental projects, that have high levels of risk as part of the new system or integration of the new system into existing systems, demands that a prototype (lead platform) be agreed up front and used for proving the capability before agreeing to additional platforms.	First of Type Equipment
Adequate communication between, and engagement of, critical stakeholders to ensure that a common understanding of Project status is maintained.	Governance

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	RADM Peter Marshall, RAN
Branch Head	CDRE Michael Houghton, RAN
Project Director / Manager	CAPT Rob Elliott, RAN **(to Nov 11)** **Mr John Runge (Nov 11–current)**

Project Data Summary Sheet[248]

Project Name	**HIGH FREQUENCY MODERNISATION**
Project Number	**JP 2043 Phase 3A**
Capability Type	Upgrade
Service	Joint Services
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Aug 96
Total Approved Budget (Current)	**$580.1m**
2011-12 Budget	**$6.1m**
Project Stage	Acceptance Testing
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

The JP2043 Phase 3A project provides for the procurement of a Modernised High Frequency (HF) Communications System for Defence long-range communications. The Fixed Network component comprises four HF stations in the Riverina, Townsville, Darwin and North West Cape areas together with primary and backup Network Management Facilities in Canberra. The project **was** also **to** provide upgrades to selected Australian Defence Force (ADF) sea, land and air mobile platforms to make them compatible with the capabilities of the modernised network. **As a result of the May 2012 Budget decisions, no further mobile platform upgrades will be undertaken under JP2043 Phase 3A.**

The Fixed Network capability has been provided in two major stages, Core and Final. The Core System replaced the prior Navy and Air Force HF systems from November 2004 with the Final System taking over support to ADF operations since April 2010. **The Null Steering Signal Enhancement (Nullarbor)** packages of work are on-going.

1.2 Current Status

Cost Performance

As at 30 June 2012, project JP2043 Phase 3A has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

The Contractor has met the last major prime contract milestone although minor work under the prime contract continues.

Design of the Land HF mobile systems Stage 1 Automatic Link Establishment capability for transit cases and Stage 2 design work for the enhanced Automatic Link Establishment capability is currently being finalised as packages of work under the prime contract. The Contract Change Proposal (CCP 149) milestones for this work are anticipated to be completed this year.

[248] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

Automatic Link Establishment capability upgrades to the selected Blackhawks have been completed for 19 of the 22 aircraft.

The Request for Tender for implementation of the Null Steering Signal Enhancement (Nullarbor) capability was released in September 2011. Two tenders were received, which have undergone detailed evaluation. A preferred tenderer has been identified and Contract negotiations will commence in the near term. Costs for this capability are expected to be achieved within budget estimates.

Schedule Performance

The delays experienced in achieving Final System acceptance under the Prime Contract led Defence to re-assess the scope of the Mobile platform upgrade program and to submit a proposal to Government for a change of scope.

Prior to final determination of Defence's scope change proposal, the government directed, in the context of the May 2012 Budget, that the residual mobiles program be truncated.

The project is working on the orderly implementation of this Government direction.

Materiel Capability Performance

Capability includes a Core System and the Final System (incorporating the upgraded Fixed Network and Mobiles Upgrades).

Operators and maintenance personnel report a good degree of satisfaction with the Final Fixed Network System. The installation of two software maintenance builds has remedied outstanding issues and the system is now providing a reliable service.

The impact of the delays on the mobile platform upgrades **was** being addressed with Capability Development Group and the Services. This **would have** lead to changes in scope to the Mobiles Upgrade programs. Issues being addressed **included** remaining Life of Type of in-scope platforms and the current need for either a full or partial modernised HF communications capability upgrade. **However, as a result of the May 2012 Budget decisions, no further mobile platform upgrades will be undertaken under JP2043 Phase 3A.**

1.3 Project Context

Project	Explanation
Background	**In the Budget of May 2012, the government directed that elements of the mobiles program not in contract be removed from JP2043 Phase 3A scope. The Null Steering Signal Enhancement (Nullarbor) work is to continue as originally programmed. The project is undertaking the necessary due diligence to support implementation of government's direction. Implementing the direction in relation to the mobiles program will reduce the project budget by $91.1m.** Defence Communications Corporate Plan of May 1991 directed that existing ADF HF networks be rationalised and modernised. Satellite communications is now the primary system for high and medium data rate communication with mobile ADF platforms (Mobiles) such as ships, aircraft and vehicles, however HF provides a secure alternative means of long range communications for Satellite communications fitted platforms and a primary long-range communication capability for platforms not Satellite communications fitted. The HF Modernisation Project was established in May 1993 and originally envisaged four implementation phases: • Phase 1 (completed 1994) – a preparatory phase including a Network Definition Study to determine the basic requirement and an Invitation to Register Interest process; • Phase 2 (completed 1996) – a more detailed definition phase involving parallel Project Definition Studies undertaken by short-listed Phase 1 companies following a Request for Proposal process; • Phase 3A (commenced 1997) – an implementation phase involving selection of the Prime Contractor through a restricted Request for Tender process, provision of a modernised HF communication network and its follow-on support, and HF upgrades to an initial range of Mobiles; and • Phase 3B (cancelled 1999) – an implementation Phase involving HF upgrades to selected remaining Mobiles. The Phase 3A Prime Contract was signed in December 1997 with Boeing Australia (now Boeing Defence Australia). The Prime Contract has undergone several major amendments and currently provides for the implementation in two stages: • a Core System (accepted October 2004), to provide an upgraded Fixed Network having a capability no less than that provided by the networks being replaced; and • a Final System (accepted April 2010) including enhanced features for the upgraded Fixed Network and a Mobiles Upgrade component. **As reflected in the 2010-11 MPR, project** approval **provided** for 87 platforms to be upgraded. The Prime Contract was originally scoped for First-of-Type installations and Upgrade Modification Kits for a total of 56 Platforms. However, amendments made in 2004 reduced the Contract scope to a single First-of-Type Upgrade (CH47 Chinook helicopter), five HF Upgrade Kits for follow-on Chinook installations, plus two Generic HF Upgrade Systems. The Generic Systems **were to** be used to demonstrate functional performance and to verify the suitability of System software and hardware components for platform use prior to implementation of Mobiles upgrades. The Chinook platform upgrade was subsequently removed from the prime contract scope due to no aircraft being available for upgrade. **As a result of the May 2012 government direction, only the Blackhawk mobile program, which is already in progress, will continue under JP 2043 Phase 3A, this will provide 22 of the originally scoped 87 mobiles, which provided for 35 Blackhawk mobile platform upgrades.** The signal improvement package of work has been developed will be installed and integrated using an independent contract to the Prime Contract. Planned delivery date is by end 2015.

Uniqueness	The HF Modernisation Project is a complex software intensive and high risk project involving geographically diverse sites at five major locations across Australia. Implementation of the Fixed Network has involved civil infrastructure development, electrical power generation and transmission, telecommunications infrastructure extension, communications system hardware and antenna installation. It has involved the engineering disciplines of systems engineering, software development, system design and integration, system test and evaluation. Because of the complex nature of the project, Integrated Product Development Teams which included Contractor and Commonwealth personnel were established. These provided project insight and reduced risk, particularly in the important areas of requirements clarification, systems engineering and acceptance, test and evaluation. The System provided is designed to be one of the most advanced of its type in the world.
Major Challenges	The project suffered implementation delays with Core and Final Fixed Network systems but these elements of the new communication system have been accepted into service and supporting operations since November 2004 and October 2009 respectively. The project is now focused on the signal improvement capabilities. Platform availability **has been** an issue for Mobiles upgrades**, however as a result of the May 2012 Budget decisions, no further mobile platform upgrades will be undertaken under JP2043 Phase 3A**.
Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
JP 2069 Phase **2 High Grade Cryptographic Equipment**	JP 2069 is a multi phased project to modernise Defence's high grade cryptographic equipment.	JP 2069 will **provide** cryptographic equipment to be integrated **into the Defence High Frequency Communications System which was procured under JP2043. As a result of the May 2012 Budget decisions, no further mobile platform upgrades will be undertaken under JP2043 Phase 3A. Therefore cryptographic equipment is no longer required to support mobile platform upgrades under JP2043.**

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Aug 96	Original Approved		505.0	
Jul 98	Real Variation – Transfers	2.3		1
Feb 99	Real Variation – Transfers	0.1		1
Feb 99	Real Variation – Scope	11.0		2
May 02	Real Variation – Transfers	0.9		3
Feb 03	Real Variation – Transfers	(6.1)		4
May 03	Real Variation – Transfers	(2.0)		5
Aug 04	Real Variation – Budgetary Adjustments	(0.2)		6
Aug 05	Real Variation – Budgetary Adjustments	(0.7)		7
May 12	Real Variation – Scope decrease.	**(91.1)**		**8**
			(85.8)	
Jul 10	Price Indexation		148.1	9
Jun 12	Exchange Variation		**12.8**	
Jun 12	**Total Budget**		**580.1**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – Boeing Defence Australia	**(356.4)**		
	Other Contract Payments / Internal Expenses	**(74.9)**		10
			(431.3)	
FY to Jun 12	Contract Expenditure – Boeing Defence Australia	**(2.2)**		
	Other Contract Payments / Internal Expenses	**(4.8)**		11
			(7.0)	
Jun 12	**Total Expenditure**		**(438.3)**	
Jun 12	**Remaining Budget**		**141.8**	

Notes	
1	Transfer from other phases of JP 2043.
2	Scope change to include Wideband HFDF capability.
3	Transfer for installation at Robertson.
4	Transfer to DSG as contribution to construction of Defence Network Operations Centre and infrastructure support.
5	Transfer to facilities.
6	Administrative Savings harvest.
7	Skilling Australia's Defence Industry harvest.
8	**In the Budget of May 2012, the government directed that elements of the mobiles program not in contract be removed from JP2043 Phase 3A scope. Implementing the direction in relation to the mobiles program has reduced the project budget by $91.1m.**
9	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $139.6m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $8.5m having been applied to the remaining life of the project.

10	Other expenditure **comprises $18.1m for Government Furnished Equipment for use by the contractor, $9.0m for Radios and ancillary Radio equipment for issue to users, $7.8m for Harris Radio System, $6.9m attributable to expenditure in DEFMIS, $1.2m for Rockwell Collins purchases, $0.9m for LHFCS prototype, $0.7m for Nullarbor Phase 3A and $0.6m for Null Steering Capability. The remaining is attributable to operating** expenditure, contractors, consultants, contingency and other capital expenditure not attributable to the aforementioned.
11	Other expenditure comprises**: $1.2m for Land mobiles work, $0.4m for Blackhawk Simulator, $1.7m for Blackhawk Aircraft upgrades,** and **other** minor contract expenditure.

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The actual amount exceeded the estimate by $0.9m due to the acceleration of Blackhawk installations resulting in the installations occurring ahead of original schedule.**
			Overseas Industry	
			Local Industry	
		0.9	Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
6.1	**7.0**	**0.9**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
Boeing Defence Australia	Dec 97	309.6	320.4	Variable	DEFPUR 101 v46	

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
Boeing Defence Australia	1	1	HF Communications Network	

Major equipment received and quantities to 30 Jun 12
Final System level of capability achieved.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Core System	Apr 98		Jun 98	2	1
	Final Systems (Fixed Network)	Jul 99		Jun 04	59	1
	Mobile Generic (In Contract)	Jul 99		Mar 05	68	1
Preliminary Design	Core System	Nov 98		Jan 00	14	2
	Final Systems (Fixed Network)	Jul 00		Aug 05	61	2
	Mobile Generic (In Contract)	Feb 00		Jul 05	65	2
Critical Design	Core System	Nov 99		Dec 00	13	3
	Final Systems (Fixed Network)	Dec 01		Nov 06	59	3
	Mobile Generic (In Contract)	Dec 02		Nov 06	47	3

Notes	
1	System Requirements Review delayed due to requirements instability. The June 1999 Deed of Agreement acknowledges 'requirements instability'.
2	Preliminary Design Review: Requirements instability & scope changes.
3	Critical Design Review Final Systems and Mobile: Contractor delays with software development and system integration design.

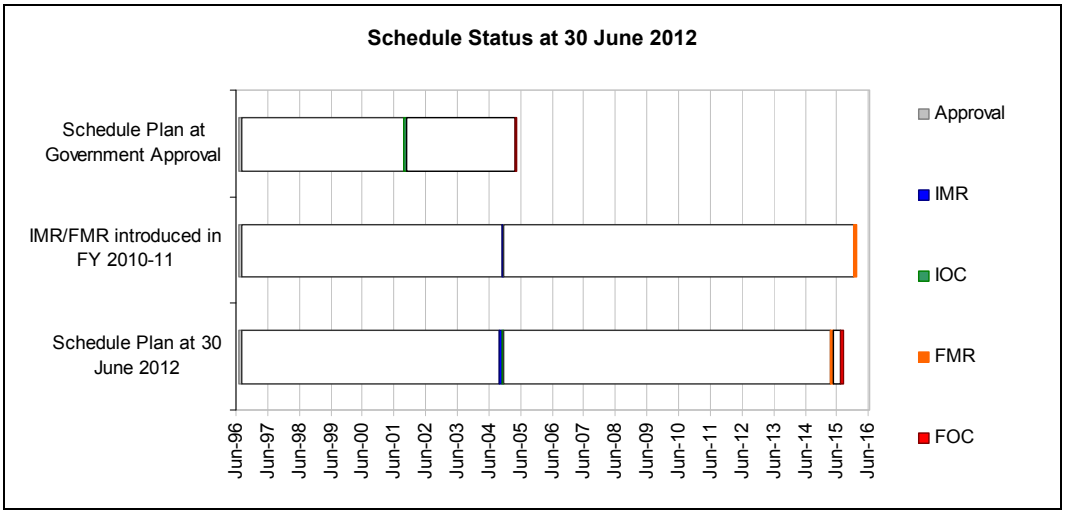
3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Final System (Fixed Network)	Sep 03		May 08	56	2
Acceptance	Core System	Mar 01		Jun 04	39	1
	DMO Acceptance – Core System	Nov 01		Oct 04	35	1
	Final System (Fixed Network)	Feb 04		Apr 10	74	2
	DMO Acceptance – Final System	May 04		Apr 10	71	2
	Generic Mobiles	Dec 03		Dec 09	72	2

Notes	
1	Core System: Contractor delays with software development and system instability.
2	Final Systems and Mobiles: Contractor delays with software development, resource shortages and technical reviews.

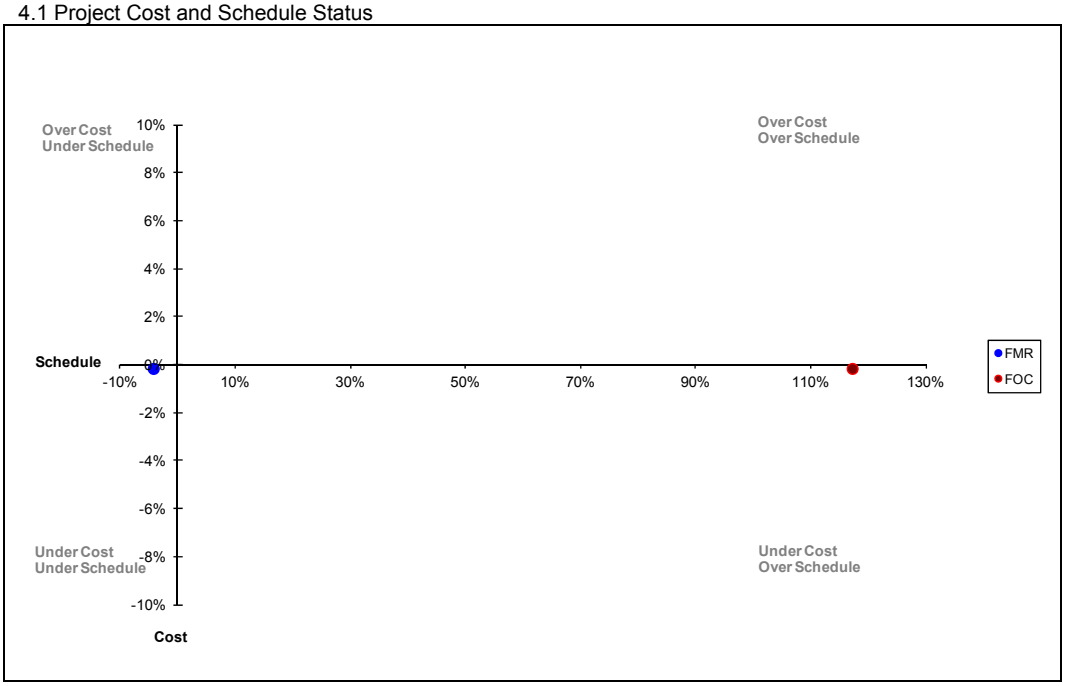
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Nov 04	N/A	
Initial Operational Capability (IOC) – Core System	Nov 01	Nov 04	36	Delays due to Contractor delays with software development and system instability. Core System supported operations until IOC of Final System. No formal Operational Release, leading to FOC, was conducted on the Core System.
IOC – Final System	May 04	Oct 09	65	Contractor delays with software development and system instability. Deferral of operational capability.
Final Materiel Release (FMR)	Feb 16	**Apr 15**	**(10)**	**As a result of the May 2012 Budget decisions, no further mobile platform upgrades will be undertaken under JP2043 Phase 3A.** **The forecast FMR is based upon schedule estimates in tender response for Nullarbor and remains subject to negotiations and date of contract commencement.**
Final Operational Capability (FOC)	May 05	**Aug 15**	**123**	Delays in IOC lead to consequent delays in FOC. **As a result of the May 2012 Budget decisions, no further mobile platform upgrades will be undertaken under JP2043 Phase 3A.** **The forecast FOC is based upon schedule estimates in tender response for Nullarbor and remains subject to negotiations and date of contract commencement.**



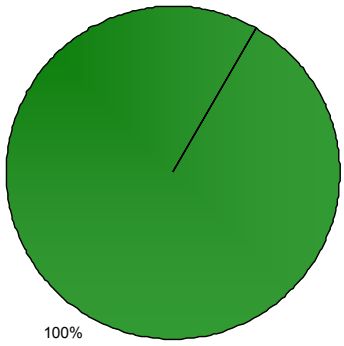
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	**Green:** The Project is currently meeting capability materiel requirements as expressed in the suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities.
	Amber: N/A
	Red: N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the cryptographic equipment required for the Land Mobile upgrades (which is replacing near-obsolete cryptographic equipment) will not be available in time to meet the schedule for the Land platform upgrades.	**Risk is now retired as a result of the May 2012 Budget decision that no further mobile platform upgrades will be undertaken under JP2043 Phase 3A.**
There is a chance that detailed design and manufacture of the modules for fitment to the LAND 121 vehicles will need to be undertaken by JP2043 before integration of Land capability into the modules can be achieved.	**Risk is now retired as a result of the May 2012 Budget decision that no further mobile platform upgrades will be undertaken under JP2043 Phase 3A.**
There is a chance that the Mobile Upgrades completion date will not be achieved due to both the complexity of integrating into the existing integrated communication systems within each platform, as well as gaining access to the platforms to perform the work.	**Risk is now retired as a result of the May 2012 Budget decision that no further mobile platform upgrades will be undertaken under JP2043 Phase 3A.**
There is a chance that the currently requested basis of provisioning for Land training will exceed the authorised basis of provisioning.	**Risk is now retired as a result of the May 2012 Budget decision that no further mobile platform upgrades will be undertaken under JP2043 Phase 3A.**
There is a chance that the system delivered under Nullarbor Phase 4 may not integrate with the MHFCS without significant changes to the MHFCS.	**Currently in the tender phase.**
Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
N/A	**N/A**

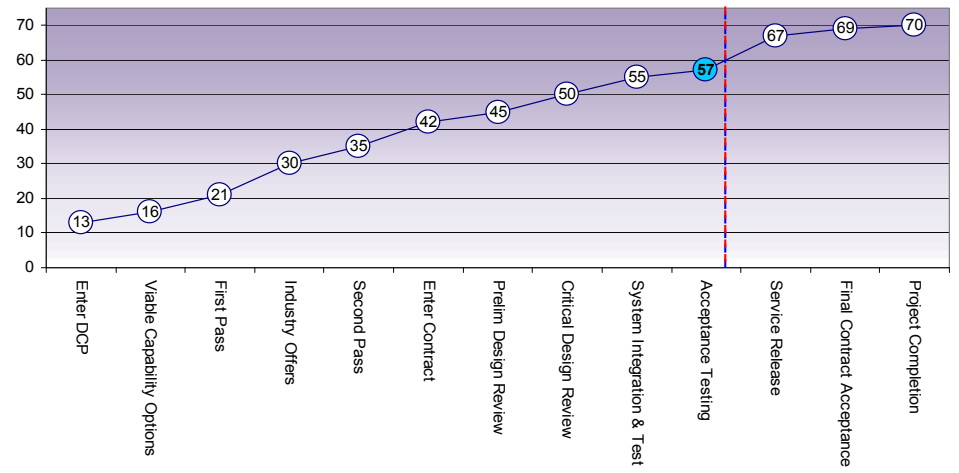
6.2 Major Project Issues

Description	Remedial Action
The proposed Mobile Upgrades scope change is not approved by Government as **initially** planned **for** during third quarter 2010, potentially delaying the Mobiles Upgrade program.	**Issue is now retired as a result of the May 2012 Budget decision that no further mobile platform upgrades will be undertaken under JP2043 Phase 3A.**

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	8	8	8	8	9	8	8	57
Acceptance Testing	Project Status	8	8	9	9	9	7	9	59
	Explanation	• **Requirement:** The Integration and Test program for the Fixed Network and Generic Mobiles has been successfully completed. • **Technical Understanding:** Final System has been accepted by Defence and has been supporting ADF operations since October 2009. Future work is focussed on **the Null Steering Signal Enhancement (Nullarbor) capability delivery.** • **Commercial:** Customer working relationship is very good. • **Operations and Support:** Core System has been operational and supported since late 2004. Final System is operational and transition to support organisation is currently being addressed.							



2010-11 DMO MPR Status - - - - 2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Risks associated with requirements instability, software development and systems engineering were known at the time of contract signature but in the light of subsequent events were clearly not adequately addressed in pre-contract negotiations. The experience underlines the importance of having well-defined and stable requirements at contract award, and of contractors having sound systems engineering and software development processes.	Requirements Management
A proper balance needs to be kept between proper engineering processes and contractor-perceived commercial imperatives to minimise risk that unrealistic technical programs will actually result in delays to the overall schedule.	Contract Management
Accessibility requirements should be agreed, specified and documented early in the contracting process to minimise risk of incurring excusable delays when access to the system to be upgraded is constrained due to operational reasons.	Contract Management Schedule Management
Best practice would suggest that for a capability acquisition that includes significant software development, a contract that allows for both fixed price elements as well as alternative cost structures which include; appropriate controls, incentive and penalty models that can be applied to the highly developmental elements involving significant risk, may be appropriate. Milestone payments could be selected for those deliverables that have well defined objectives and the alternative payment method with incremental work packages could be applied to the software aspect of the project. This approach would require strict controls and metrics to limit the risk to the Commonwealth.	Contract Management
Substantial developments in the information technology field over the extended term of the project means that some elements of the system could now be delivered via off-the-shelf solutions or by other contemporary products, rather than attracting extended software development, thereby reducing risk, schedule and possibly cost. The proposed approach for capability development involving substantial software or software systems development over an extended period needs to be considered carefully to enable best use of emerging developments within appropriate risk, schedule and cost constraints.	First of Type Equipment Off the Shelf Equipment

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	Mr Michael Aylward
Branch Head	Ms Myra Sefton
Project Director	**Mr Andrew Schmidt (to Jan 12)** **Mr Allan Combridge (Jan 12–May 12)** **Mr Anthony Burger (May 12–Current)**

Project Data Summary Sheet[249]

Project Name	**ADDITIONAL MEDIUM LIFT HELICOPTERS**
Project Number	**AIR 9000 Phase 5C**
Capability Type	Replacement
Service	Australian Army
Government 1st Pass Approval	Sep 07
Government 2nd Pass Approval	Feb 10
Total Approved Budget (Current)	**$550.9m**
2011-12 Budget	**$16.8m**
Project Stage	**Preliminary Design Review**
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

This project seeks to replace the extant Australian Defence Force (ADF) Medium Lift Helicopter capability of CH-47D Chinook helicopters with seven new modernised CH-47F Chinook helicopters, two Transportable Flight Proficiency Simulators and associated supporting systems.

1.2 Current Status

Cost Performance

As at 30 June 2012, project AIR 9000 Phase 5C has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

An outcome of the 2012 Budget was the re-phasing of the project budget across the forward estimates to reduce the spend profile, particularly in FY 2013/14. The full impact of this is yet to be analysed and agreed with the US Army which may result in a delay to the capability milestone dates indicated within this Project Data Summary Sheet.

Amendment **3** to the Foreign Military Sales (FMS) case is currently under development and will add further fidelity to FMS expenditure forecasts.

Schedule Performance

The Project successfully achieved Government Second Pass approval on schedule in February 2010. Shortly thereafter and ahead of schedule, an FMS case was signed with the United States (US) Government in March 2010. The next major milestone will see all contracts in place and all remaining Project plans completed no later than December 2012. **The rephasing of the project budget spend profile may result in a delay** to the Project achieving **the forecast capability** milestones.

[249] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

Materiel Capability Performance

The CH-47F Chinook helicopter being acquired is a Military Off The Shelf (MOTS) procurement of a US specification CH-47F Chinook, with only minimal essential ADF unique modifications. The CH-47F Chinook has been employed operationally by the US Army for over **three** years and the capability has achieved outstanding results in Iraq and in particular the Afghanistan theatre, where its hot and high altitude performance are unmatched by any other rotary wing aircraft. The ADF has yet to take delivery of any aircraft; however, there are currently no impediments to the Project achieving the materiel capability performance requirements.

1.3 Project Context

Project	Explanation
Background	Support to the extant ADF CH-47D Chinook fleet is heavily leveraged off the US Army and supporting US industrial base. The US Army is currently several years into a program to replace its entire CH-47D fleet with the modernised CH-47F Chinook helicopter. Beyond 2017, adequate in service **logistics** and training **support** from the US Army for the ADF CH-47D will no longer be available. Procurement of the CH-47F will ensure the ongoing viability of a Medium Lift Helicopter capability to the ADF. The ADF CH-47D fleet is small and loss or severe damage of a single aircraft would result in a significant capability loss. The growth in fleet size (to seven) will enhance the robustness of the ADF Medium Lift Helicopter capability. With the current ADF CH-47D fleet operationally committed in Afghanistan, a MOTS procurement strategy via the government-government FMS program, offered the lowest risk capability solution in terms of project cost and schedule. Following Government Second Pass in February 2010, the Commonwealth signed a FMS case with the US Government in March 2010. The US Army is currently in contract negotiations with suppliers for the provision of the aircraft and all other supporting systems specified in the FMS case. Boeing is the principal Original Equipment Manufacturer (OEM) for the CH-47F Chinook.
Uniqueness	The CH-47F aircraft sought through the Project is a MOTS US Army specification CH-47F Chinook helicopter. The only production configuration difference with the ADF aircraft is the inclusion of a rotor brake to allow for embarked amphibious operations. The rotor brake is a mature design that has been previously certified on other US Army and international variants of the Chinook. A minimal number of ADF unique modifications will be installed on the aircraft following delivery. All of these modifications are mature designs which have previously been integrated and certified on the ADF CH-47D Chinook. Integration of these ADF modifications carries very low technical risk due to the high degree of commonality between the CH-47D and CH-47F aircraft. The CH-47F is a modern digital aircraft. The Common Avionics Architecture System (CAAS) and Digital Automatic Flight Control (DAFCS) are the two most significant upgrades included on the CH-47F Chinook over its predecessor. These systems have been certified by the US Army and Boeing and are currently in service. The Project includes delivery of two Transportable Flight Proficiency Simulators (TFPS) to provide an organic ADF CH-47F simulator capability. Previous simulator training support for the CH-47D has been provided by the US Army. The Cargo Helicopter Management Unit (CHMU) is the organisation responsible for acquiring the CH-47F capability. The CHMU is also responsible for the in-service support to the extant CH-47D capability as well as the CH-47F model following transition into service. Having the CHMU as the single acquisition and sustainment organisation provides synergistic benefits due to the high degree of commonality between the CH-47D and CH-47F aircraft.

Major Challenges	The current ADF CH-47D Chinook fleet is operationally committed in Afghanistan on Operation SLIPPER. Fielding a replacement CH-47F Chinook fleet in parallel with an operational deployment provides transition and capability realisation challenges. Whilst the FMS program affords a significant number of advantages, delegation of many project management and contracting functions to the US Government, coupled with restrictive communications protocols, provides some management challenges to the ADF Project team for this schedule critical Project.
Other Current Projects/Sub-Projects	**Project Air 9000 Chinook Capability Alignment Program (CH CAP):** A pre-second pass project that seeks to provide continuous upgrades to the ADF CH-47F fleet to ensure configuration alignment is maintained with the US Army CH-47F fleet. The benefits of configuration alignment are primarily reduced cost of ownership through the ability to leverage off US Army CH-47F support arrangements, increased interoperability and reduced obsolescence risks/costs attributable to operating a small orphan fleet of aircraft.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Sep 07	Original Approved		3.4	1
Apr 10	Government Second Pass Approval	634.2		
			637.6	
Jul 10	Price Indexation		46.9	2
Jun 12	Exchange Variation		**(133.6)**	
Jun 12	**Total Budget**		**550.9**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – US Government	**(11.5)**		
	Other Contract Payments / Internal Expenses	**(2.6)**		**3**
			(14.1)	
FY to Jun 12	Contract Expenditure – US Government	**(79.6)**		
	Other Contract Payments / Internal Expenses	**(1.5)**		**4**
			(81.1)	
Jun 12	**Total Expenditure**		**(95.2)**	
Jun 12	**Remaining Budget**		**455.7**	

Notes	
1	This project's original DMO budget amount is that prior to achieving Second Pass Government Approval.
2	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $16.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $30.6m having been applied to the remaining life of the project.
3	Major items of expenditure include development of crashworthy seats **$0.7m**, Workforce and Operating expenses **$0.9m, Research & Development costs $0.5m, office expenses $0.1m,** and **travel and training expenses $0.4m**.

4	**Major items of expenditure include development of crashworthy seats, general Workforce and Operating expenses, and travel expenses.**

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		64.5	FMS	**Additional funding was applied for prior to the end of the financial year to meet a larger than anticipated FMS payment to the US Government.**
			Overseas Industry	
			Local Industry	
			Brought Forward	
		(0.2)	Cost Savings	**Small cost savings were realised in travel and general office expenditure.**
			FOREX Variation	
			Commonwealth Delays	
16.8	**81.1**	**64.3**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
US Government	Mar 10	513.5	515.4	FMS	FMS	1

Notes	
1	Amendment in **February 2012** adds better definition to the contracted materiel and services.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
US Government	7	7	CH-47F	1

Major equipment received and quantities to 30 Jun 12
No equipment has been received as at 30 June 2012.

Notes	
1	First aircraft delivery is expected in 2014.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System /Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	CH-47F Chinook helicopter	N/A		N/A	N/A	1
	Rotor Brake	Feb 12		**Apr 12**	**2**	2
	ADF Unique Modifications	Jul 11		**Jul 12**	**12**	3
Preliminary Design	CH-47F Chinook helicopter	N/A		N/A	N/A	1
	Rotor Brake	**Sep 12**		**Sep 12**	0	2
	ADF Unique Modification	**May 13**		**May 13**	0	3
Critical Design	CH-47F Chinook helicopter	N/A		N/A	N/A	1
	Rotor Brake	**Mar 13**		**Mar 13**	0	2
	ADF Unique Modifications	Apr 14		**Sep 13**	**(7)**	3

Notes	
1	CH-47F Chinook helicopter system requirements and design reviews not required as it is a MOTS aircraft.
2	Rotor brake design **has been** contracted to Boeing by the US Army. Rotor brake design is a mature design that has been previously certified on other US Army and international Chinook variants.
3	All ADF unique modifications **except blade fold kit** are mature designs that have been previously certified on the ADF CH-47D Chinook.

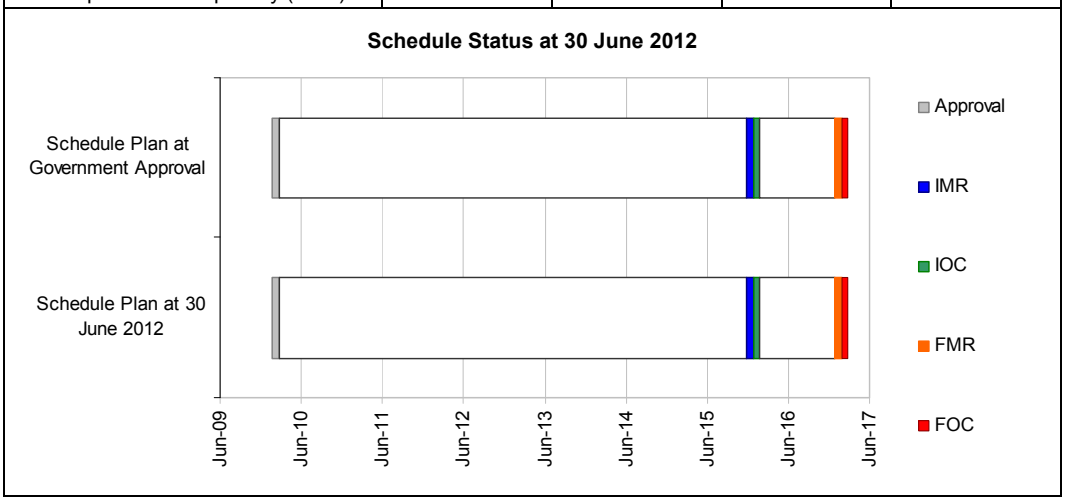
3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System /Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Rotor Brake	Nov 11 – Feb 14		**Feb 13 – May 14**	**3**	2
Acceptance	CH-47F Chinook helicopter	Mar 14 – Nov 15		**Jun** 14 – Nov 15		1
	Rotor Brake	Apr 14		**Jun 14**	**2**	2

Notes	
1	CH-47F Chinook helicopter acceptance dates are currently estimates only as **the** US Army production contract for ADF aircraft with Boeing **was signed in December 2011 but implementation will not be finalised until July 2012.**
2	Rotor brake acceptance dates are currently estimates only as **the** US Army has **only recently signed the** contract for rotor brake integration with Boeing. **DMO does not expect the US Army to finalise the schedule until late 2012.**

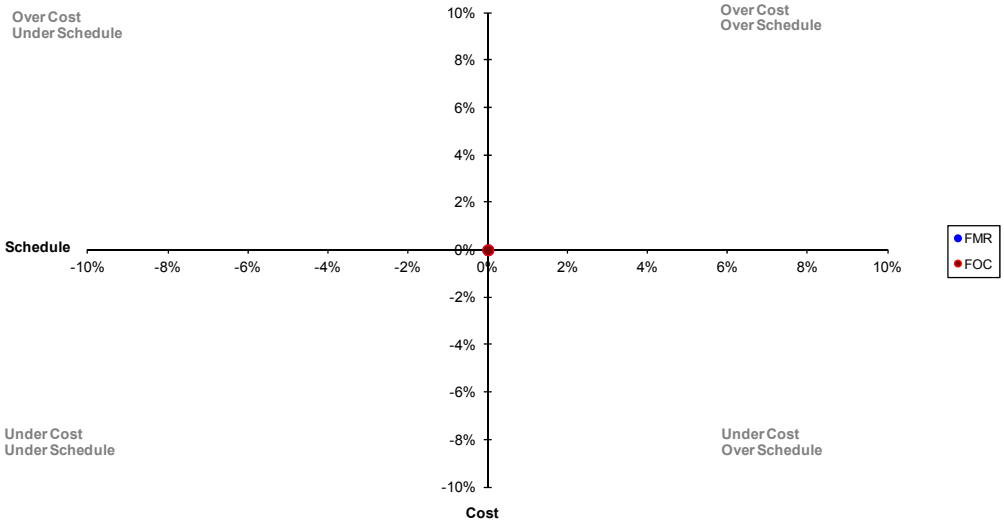
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation /Implications
Initial Materiel Release (IMR)	Jan 16	Jan 16	0	
Initial Operational Capability (IOC)	Jan 16	Jan 16	0	
Final Materiel Release (FMR)	Jan 17	Jan 17	0	
Final Operational Capability (FOC)	Jan 17	Jan 17	0	



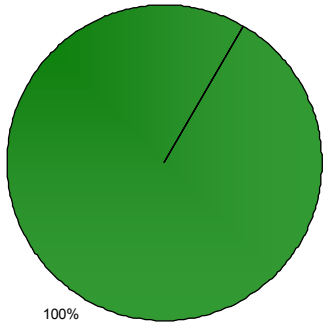
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	**Green:** The Project is currently meeting capability materiel requirements, as expressed in the Materiel Acquisition Agreement and in accordance with the requirements of the relevant Technical Regulatory Authorities.
	Amber: N/A
	Red: N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the Australian Military Type Certification will be affected by differences / **deficiencies** in US certification requirements leading to an impact on schedule.	Access technical data and US Army Subject Matter Experts early to ensure any issues are identified and rectified in a timely manner. Continue engagement with other countries to leverage off their experience and certification efforts. Maintain configuration commonality with the US Army to prevent ADF unique certification efforts. Continue to engage ADF support agencies to ensure possible issues or testing requirements are identified early.
There is a chance that the training plan will be impacted by limited availability and positions within the US Army's CH-47F Chinook training system leading to an impact on schedule.	Clearly define training requirements in the Project Training Plan. Early engagement with the US Army to secure training courses and positions. Frontload transition training to ADF instructors and supervisors to improve future opportunities for internal training and enable early development of ADF training packages. Obtain simulators and training materials necessary to minimise the requirement of dependency on the US Army for currency training. **This risk has been reassessed and is now rated as a medium risk.**
There is a chance that aircraft delivery will be affected by delays in aircraft production at Boeing leading to an impact on schedule.	Continued liaison with US Army on ADF delivery schedule and configuration requirements until US Army contract **'definitisation'** with Boeing **is completed** and production slots are secured.
There is a chance that the Australian Transportable Flight Proficiency Simulator (TFPS) accreditation will be affected by lack of prior US qualification / certification leading to an impact on schedule.	TFPS assessment by ADF Subject Matter Experts conducted January 2011. US Army has been contracted to develop TFPS Australian Visual Database which will meet Australian accreditation requirements. Development of TFPS Qualification Plan detailing accreditation requirements and schedule.
There is a chance that the CH-47F embarked operations requirement will be affected by corrosion to the aircraft leading to an impact on performance and supportability.	Conduct detailed Logistic Support Analysis for embarked operations in order to identify requirements for: • increased use of corrosion prevention maintenance activities, • increased corrosion inspections to monitor the risk, and • dehumidification rig and other Support & Test Equipment for use in embarked operations. **This risk has been reassessed and is now rated as a medium risk.**
There is a chance that the ongoing support of the ADF CH-47F will be affected by an inadequate transfer of technology and information leading to an impact on capability.	Risk treatments are complete but risk is retained in risk log for monitoring purposes. Residual risk low.
There is a chance that the Australian unique Modifications will be affected by failure to achieve Service Release of the Engineering Change Proposal leading to an impact on schedule.	Risk treatments are complete but risk is retained in risk log for monitoring purposes. **This risk has been reassessed and is now rated as a medium risk.**

There is a chance that the project budget will be affected by prime equipment costs exceeding those provided in the Letter of Acceptance leading to an impact on cost.	Risk treatments are complete but risk is retained in risk log for monitoring purposes. Residual risk low.
There is a chance that the Australian unique modification program will be affected by cost increases in individual mods leading to an impact on cost.	Risk treatments are complete but risk is retained in risk log for monitoring purposes. **This risk has been reassessed and is now rated as a medium risk.**
If the responsibility for managing Chinook Helicopter Capability Alignment Program is placed on the Chinook Helicopter Project Office, the schedule may be affected due to increased workload under current workforce defined in Workforce Definitions V5.0.	Risk treatments are complete but risk is retained in risk log for monitoring purposes. **This risk has been retired.**

Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
There is a chance that project management and performance will be affected by overseas travel constraints that may lead to inadequate direct engagement between DMO project staff and the US Army, other US suppliers and stakeholders leading to an impact on cost, schedule, performance and reputation.	**Early identification of overseas travel requirements and the development of robust business cases for travel. Raising risks where overseas travel is not approved and referring that risk higher in the DMO for acceptance or further treatment. Establishment of increased ADF Resident Project Team representation in the USA.**
There is a chance that the Australian TFPS capability will be affected by a delay in Visual Database (VDb) completion leading to an impact on schedule and capability.	**Continued close engagement with US Army on VDb contracting and development. Early and continued engagement with TFPS VDb developers by DMO project team through a program of design reviews. Development of an interim VDb solution to enable TFPS qualification and commencement of training.**
There is a chance that project execution will be significantly affected by the re-phasing of the Project budget post the 2012 Government budget leading to an impact on cost and schedule.	**The Project has conducted detailed negotiation with the US Army to mitigate the risk to cost and schedule. Securing an adequate Project budget over the next three years that meets the minimum funding level required by the US Army is the only way to fully mitigate this risk. The negotiated minimum spend profile formed the basis of the Project's Additional Estimates bid. No further mitigation is possible until the Additional Estimates process is finalised and Project budget phasing adjusted.**

6.2 Major Project Issues

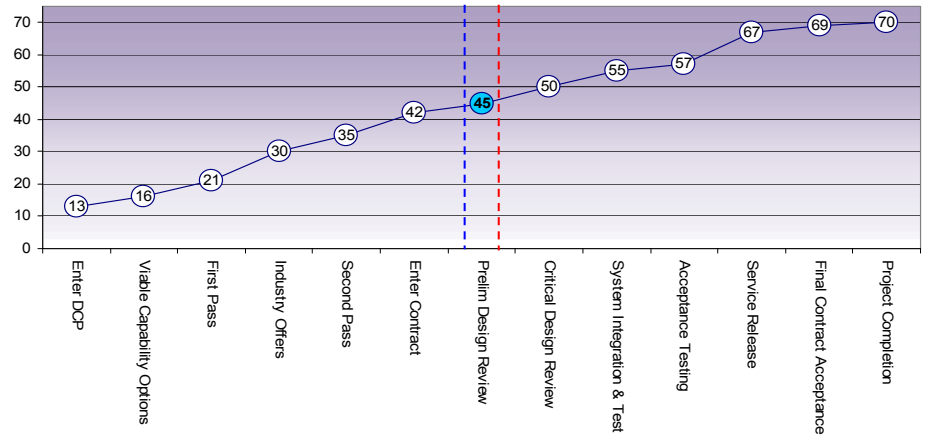
Description	Remedial Action
Inadequate performance in project management of the FMS case by the US Army is currently impacting on cost and schedule for the CH-47F Mission and Support Systems and may also impact on capability and reputation if this issue is not appropriately managed.	**Continued performance monitoring of US Army project management efforts by the in country ADF Project Liaison Officer. Increased overseas travel to enable greater level of direct interaction between ADF and US Army. Increased size of a Resident Project Team, co-located with US Army implementing organisation to provide further oversight. Pursue increased resourcing and project management qualification of the US Army project team. This issue has previously been reported as a risk.**

Inadequate resourcing of the US Army project team is currently impacting on cost and schedule for the CH-47F Mission and Support Systems and may also impact on capability and reputation if this issue is not appropriately managed.	**Develop an integrated master schedule and conduct resource analysis and levelling. Conduct detailed review of resourcing with US Government and request additional resourcing as required to meet ADF program outputs. Increase funding on FMS case to procure additional resourcing as required. Increased size of ADF Resident Project Team co-located with US Army implementing organisation to provide further oversight and assist with critical aspects of program.**
Indecision regarding the future of Victoria Barracks Brisbane (VBB) accommodation, or the establishment of an alternate DMO office facility in Brisbane, is preventing staff transition planning for the collocation of DMO CH-47 sustainment staff to Brisbane. This issue is directly related to DMO's ability to provide efficient and effective support to Initial Operational Capability.	**Progress VBB redevelopment design to 100% so that construction phase can be initiated quickly once redevelopment approval is given. Continued high level engagement between DMO and Defence Support Group to pursue a determination on the use of VBB or another site. Develop detailed schedule to identify available options; redevelop, new build or lease. Work DMO Accommodation Section to Develop an accommodation and workforce transition plan within the limitations of the unknown facility location.**
Delays to the commencement of the Parliamentary Works Committee (PWC) review and approval process for the construction of maintenance facilities at 5 Aviation Regiment Townsville has resulted in an overlap between CH-47F Introduction into Service and the facilities construction phase. This issue will impact on the efficient and effective Introduction into Service of the CH-47F and may impact the schedule to Initial Operational Capability.	**As co-sponsor (with Army and Capability Development Group) of the facilities program, DMO to maintain ongoing oversight of the facilities program managed by Defence Support Group (DSG). Influence the DSG project approval program to minimise potential delays to Parliamentary Works Committee approval through appropriate engagement at all levels. Implement effective decanting and construction phases to maximise construction efficiency whilst minimising impact to extant operations.**

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	6	6	6	**7**	6	**7**	**7**	**45**
Preliminary Design Review	Project Status	6	**7**	6	**7**	7	6	7	**46**
	Explanation	• **Cost: Some variations between budgets for costed Work Breakdown Structure elements, but overall Estimate at Completion is still projected to be within total project contingency based on cost variance trends and cost risk assessments.** • **Technical Difficulty:** All intended modifications to baseline US Army specification CH-47F Chinook are mature designs and are ready for integration. • **Commercial: US Government project team is in place but currently lacks the resourcing, skills and experience to engender confidence that contract performance will be well managed.**							



2010-11 DMO MPR Status - - - - - 2011-12 DMO MPR Status - - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Whilst the FMS program affords a number of advantages, it should be recognised that the transfer of a significant majority of ADF Project Management functions to the US Government implementing agency and the weak bargaining position of the Commonwealth, increases the project's exposure to risk (technical, schedule and cost). The resultant level of risk and complexity is often understated and the level of Commonwealth contract management involvement and oversight is very low in comparison to that mandated for other forms of procurement such as Direct Commercial Sale (DCS) contracts. The early establishment of a robust project contract management regime between the project office and US Government implementing agency is essential to ensure an adequate level **of** contract management oversight.	Contract Management
A reasonable presence of project staff in the US is required for large or technically complex FMS procurements to enable the Commonwealth adequate insight, influence and progress reporting of the US Army and major OEM activities. In-country presence is required prior to Government second pass approval, particularly during FMS case development and negotiation.	Resourcing
Project Government approval schedules are independent to, and can be out of synch with military posting cycles. This can create significant extended vacancies within the Project workforce following Government Second Pass approval, including key positions such as Project Director and Project Manager.	Resourcing
The recruitment process lead times for candidates not already within the ADF or Australian Public Service can create significant extended vacancies within the Project workforce.	Resourcing
Where replacement capabilities are sought, significant synergetic benefits can be achieved through combining or co-locating the acquisition project team with the extant in-service support organisation.	Resourcing
Recognition of prior certification of MOTS equipment by other airworthiness and technical regulatory authorities should be maximised where possible in order to minimise technical and schedule risk. Early ADF regulator involvement in the formal recognition process is considered essential.	**Off-the-shelf Equipment**
Supporting science and technology outcome requirements will continue to evolve throughout the Project. These requirements need to be reviewed and updated regularly to ensure they remain relevant in the dynamic project environment.	**Requirements Management**

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	RADM Mark Campbell
Branch Head	BRIG Andrew Mathewson
Project Director	GPCAPT David Scheul
Project Manager	LTCOL Tyron de Boer

Project Data Summary Sheet[250]

Project Name	**ARMIDALE CLASS PATROL BOAT**
Project Number	**SEA 1444 Phase 1**
Capability Type	Replacement
Service	Royal Australian Navy
Government 1st Pass Approval	Jun 01
Government 2nd Pass Approval	Oct 02
Total Approved Budget (Current)	$537.2m
2011-12 Budget	**$4.0m**
Project Stage	Service Release
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

This project is to deliver 14 **Armidale Class Patrol Boats** (ACPB) and provide 15 years in-service support. In addition the project is providing funding to **Defence Support Group** (DSG) to deliver patrol boat facilities at Cairns and Darwin.

The new patrol boats will improve the Navy's capability to intercept and apprehend vessels suspected of illegal fishing, quarantine, customs or immigration offences and will provide 3500 days availability with the scope to surge up to 600 days per annum.

1.2 Current Status

Cost Performance

As at 30 June 2012, project SEA 1444 Phase 1 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

Progress continues towards achievement of Final Operational Capability (FOC), which **now** remains dependent on **Navy approving Operational Release (OR) of the final two vessels**.

Materiel Capability Performance

All vessels continue to meet the Navy's operational requirements. The Patrol Boat Systems Program Office **(PBSPO)** continues to close extant build-related issues **with** HMAS GLENELG, representing the ACPB capability, achieving OR on 19 May 2010. The **remaining vessels have now been modified to meet the GLENELG Product Baseline and** closure of the acquisition phase of the project will commence after FOC is achieved in **2012.**

[250] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

1.3 Project Context

Project	Explanation
Background	In June 2001 Government required Defence to analyse private finance and direct purchase options and to recommend a preferred procurement strategy. Defence requested tenders for private finance and/or direct purchase. After Government approval of the preferred acquisition strategy, Stage 1 short-listing occurred, then a Stage 2 Request For Tender was released to the short-listed companies. In June 2002 after the Stage 1 bids from nine tenderers were evaluated, Government decided not to proceed with private financing as there was no clear financial advantage in pursuing that option. The Stage 2 Request For Tender for direct purchase closed in November 2002 and in August 2003 the Minister for Defence announced the preferred tenderer as Defence Maritime Services (DMS). In December 2003 Defence signed a contract with DMS for the supply and support of 12 ACPB. The scheduled delivery for the vessels was to be from May 2005 to June 2007. In May 2005 further funding was provided for an additional two vessels to be acquired under Project Sea 1444, to operate as part of the Government's Securing the North West Shelf policy. All 14 vessels have been delivered and achieved **Initial Operational Release** (IOR) and commissioned into the Navy. The last vessel achieved IOR in November 2007 and commissioned in February 2008.
Uniqueness	The contractor had to propose the number of vessels required to meet the operational requirements and their maintenance obligations. In the original tender, 12 vessels was the minimum that could be supplied to meet the proposed requirement. This approach also involved Navy moving to a multi-crewing philosophy for the ACPB fleet. Also, following Government direction (equivalent to first pass) the acquisition strategy considered both private finance and ownership models for the acquisition of the required capability. This strategy meant that with either model the DMO contracted for the acquisition and support of the fleet in one single contract rather than the traditional acquisition model followed by a separate support contract.

Major Challenges	ACPB Rectification Program. **The extended rectification program was successfully completed on schedule in December 2011 and all vessels have now been modified to the GLENELG product baseline. Twelve vessels have achieved Operational Release (OR) and the reports recommending OR of the final two vessels are with the Force Commander for consideration.** Fuel system. The problem of water contamination causing fuel pump failures and fuel cloudiness has been resolved through a series of design changes and changes to operating procedures. Modified fuel oil purifier sets **have now been installed on 8 vessels** and fitment across the remainder of the Class **is expected be complete by the end of 2012**. Sea-boat davit hydraulics. Tests conducted by AUSTAL **and DMS** on the sea-boat davits indicate that hydraulic piping modifications and upgrades to the hydraulic power packs are unable to deliver a system that meets the contracted performance **of 0.6m/sec at 4500kgs**. **As a consequence the Commonwealth has agreed to accept a lesser lift rate that is subject to assessment of the operational risks and limitations on operational capability. DMS has proposed a revised lift rate of 0.3m/sec at 4500kgs which is currently under consideration.** Austere Accommodation Compartment. As a result of successful trials following modifications to the exhaust stacks and the black and grey water system and the installation of gas sensors in the Austere Accommodation Compartment (AAC), the Navy has lifted the restrictions on the use of the compartment **on all vessels** for appropriately trained Defence personnel. Sewerage Treatment Plant. A repeat of the First of Class Sewage Treatment Plant (STP) trial indicated that there was no evidence of Hydrogen Sulphide (H_2S) generation affecting the AAC but found environmental concerns related to overboard discharge quality not meeting the latest International Maritime Organisation (IMO), Marine Environment Protection Committee (MEPC) targets. This issue does not impact the safety of the STP or sewage system in relation to the production of H_2S or other toxic gases **and since the STP as designed meets the IMO MPEC requirements as required by the Classification Society the prime contractor does not plan to take any further action.** **ACBP Propulsion System Reliability. ACPB propulsion system reliability has been compromised by stern tube bearing design failures. These failures and the resultant withdrawal of boats from service for unscheduled maintenance have significantly impacted vessel availability for operational tasking. This issue was highlighted in the recent ACPB Seaworthiness Board and is the subject of Seaworthiness Corrective Action Report (SCAR) ACPB-11-01.**
Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
N/A	**N/A**	**N/A**

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Jun 02	Original Approved		436.8	
Jun 04	Real Variation – Budgetary Adjustment	2.6		1
Aug 04	Real Variation – Budgetary Adjustment	(0.4)		2
Nov 04	Real Variation – Transfer	(0.2)		3
Jun 05	Real Variation – Transfer	(1.8)		4
Jun 05	Real Variation – Scope	67.1		5
Aug 05	Real Variation – Budgetary Adjustment	(1.5)		6
Aug 08	Real Variation – Transfer	(27.8)		7
			38.0	
Jul 10	Price Indexation		74.5	8
Jun 12	Exchange Variation		(12.1)	
Jun 12	**Total Budget**		537.2	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – DMS	**(432.7)**		
	Contract Expenditure – BAE	(15.3)		
	Other Contract Payments / Internal Expenses	**(36.7)**		**9**
			(484.7)	
FY to Jun 12	Contract Expenditure – DMS	**(2.7)**		
	Contract Expenditure – BAE	**(0.2)**		**10**
	Other Contract Payments / Internal Expenses	**(0.3)**		**11**
			(3.2)	
Jun 12	**Total Expenditure**		**(487.9)**	
Jun 12	**Remaining Budget**		**49.3**	

Notes	
1	Real adjustment due to incorrect currency mix used at time of approval.
2	Administrative Savings harvest.
3	Transfer to Joint Materiel Agency for supply of medical allowance list.
4	Joint Ammunition Logistic Organisation for Typhoon (gun) 22mm rounds.
5	Increased scope for the number of Patrol Boats from 12 to 14.
6	Skilling Australia's Defence Industry harvest and transfer to DSG for office fit out in Darwin.
7	Transfer to DSG for upgrades of wharf facilities at Darwin and Cairns.
8	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $72.9m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $1.6m having been applied to the remaining life of the project.
9	Other expenditure comprises: Legal Services $1.3m, Purchase of Rafael Typhoon Cannons $5.3m, Purchase of Cryptographic equipment $2.4m, Consultant Activities $7.1m, Fuel Settlement Deed $1.4m and other operating and capital expenditure not attributable to the aforementioned top two contracts.

10	**The final payment of $0.2m to BAE was for the purposes of PRISM III Contract settlement in November 2011.**
11	**Other expenditure comprises: Consultant Activities $0.12m, purchase of technical equipment $0.1m and costs associated with travel $0.03m.**

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**Variance due to late submission and/or approval of Contract Change Proposals (CCP) and delays in the rendering of invoices by the Contractor.**
			Overseas Industry	
		(0.8)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
4.0	**3.2**	**(0.8)**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
DMS	Dec 03	316.6	391.6	Variable	SMART 2000/ ASDEFCON	1
BAE	Sep 04	13.0	**16.2**	Fixed	SMART 2000/ ASDEFCON	2

Notes	
1	The majority of the variation in price is as a result of the additional 2 vessels. There have been other minor contract changes that have not had a significant impact on the price.
2	The variation in price is as a result of the PRISM III acquisition and installations on the additional 2 vessels.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
DMS	12	14	Armidale Class Patrol Boats	
BAE	12	14	PRISM III System	

Major equipment received and quantities to 30 Jun 12
All 14 boats accepted at IOC. Engineering and maintenance arrangements established.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Preliminary Design	ACPB	Feb 04		Feb 04	0	
Critical Design	ACPB	May 04		Apr 04	(1)	

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Acceptance	ACPB 01 (HMAS ARMIDALE)	May 05		Jun 05	1	1
	ACPB 02 (HMAS LARRAKIA)	Oct 05		Nov 05	1	1
	ACPB 03 (HMAS BATHURST)	Nov 05		Dec 05	1	1

	ACPB 04 (HMAS ALBANY)	Mar 06		Apr 06	1	1
	ACPB 05 (HMAS PIRIE)	Mar 06		Apr 06	1	1
	ACPB 06 (HMAS MAITLAND)	Jun 06		Jun 06	0	
	ACPB 07 (HMAS ARARAT)	Jul 06		Jul 06	0	
	ACPB 08 (HMAS BROOME)	Oct 06		Oct 06	0	
	ACPB 09 (HMAS BUNDABERG)	Nov 06		Nov 06	0	
	ACPB 10 (HMAS WOLLONGONG)	Mar 07		Apr 07	1	2
	ACPB 11 (HMAS CHILDERS)	Mar 07		May 07	2	2
	ACPB 12 (HMAS LAUNCESTON)	Jun 07		Jul 07	1	2
	ACPB 13 (HMAS MARYBOROUGH)	Sep 07		Sep 07	0	
	ACPB 14 (HMAS GLENELG)	Nov 07		Nov 07	0	

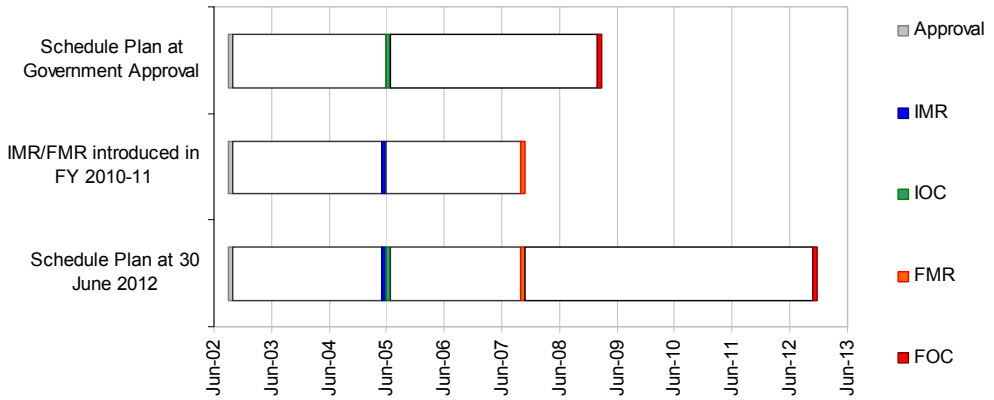
Notes	
1	Boats 1-5 delayed due to contractor labour shortages - permissible delays.
2	**Boats** 10-12 delayed due to configuration changes and change to delivery location – permissible delays, plus defect rectifications by the contractor.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Jun 05	N/A	**Boats 1-5 delayed due to contractor labour shortages - permissible delays.**
Initial Operational Capability (IOC)				
ACPB 01	N/A	Jul 05	N/A	The IOC date for each boat was not specified by Navy until after boat acceptance had been achieved.
ACPB 02	N/A	Jan 06	N/A	
ACPB 03	N/A	Feb 06	N/A	
ACPB 04	N/A	May 06	N/A	
ACPB 05	N/A	May 06	N/A	
ACPB 06	N/A	July 06	N/A	
ACPB 07	N/A	Aug 06	N/A	
ACPB 08	N/A	Nov 06	N/A	
ACPB 09	N/A	Nov 06	N/A	
ACPB 10	N/A	May 07	N/A	
ACPB 11	N/A	Jul 07	N/A	
ACPB 12	N/A	Aug 07	N/A	
ACPB 13	N/A	Oct 07	N/A	
ACPB 14	N/A	Nov 07	N/A	
Final Materiel Release (FMR)	N/A	Nov 07	N/A	

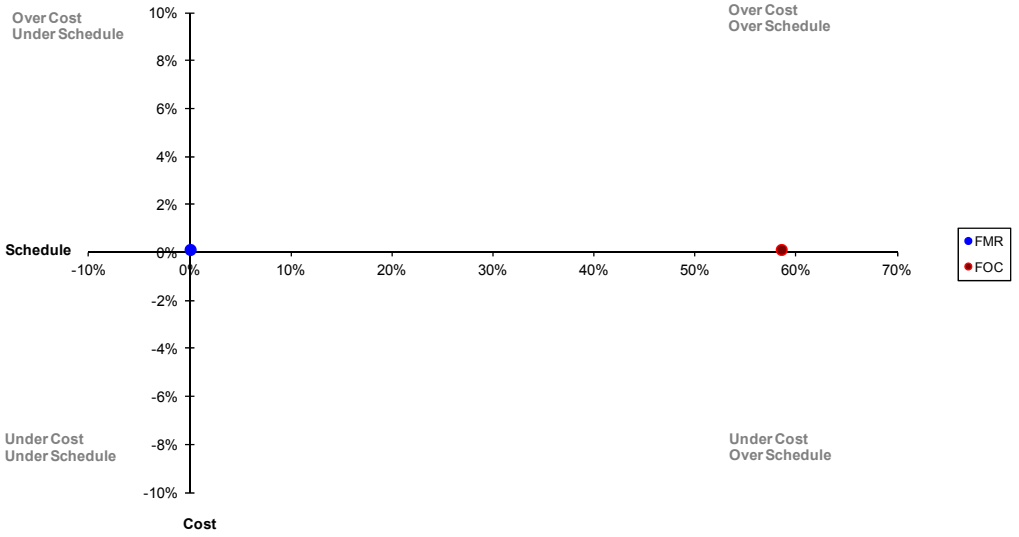
Final Operational Capability (FOC)	Mar 09	**Dec 12**	**45**	Delay in achieving FOC due to outstanding latent defects that must be rectified to satisfy Navy OR requirements. **The extended rectification program was completed on schedule in December 2011 bringing all vessels to the GLENELG product baseline. Twelve vessels have achieved Operational Release (OR) and the reports recommending OR of the final two vessels are with the Force Commander for consideration. Release of the final two vessels** will enable the achievement of FOC for the Class.

Schedule Status at 30 June 2012



Section 4 – Project Cost and Schedule Status

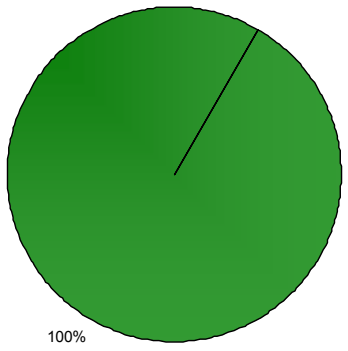
4.1 Project Cost and Schedule Status



Note: FMR schedule variance cannot be plotted without an original planned FMR date as a reference.

Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	**Green:** The project shall provide sufficient operational capability across the following elements: • Range; • Reliability; • Speed; • Towing; • Fit for purpose; and • Sea Keeping/Handling Characteristics.
	Amber: N/A
	Red: N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Contractor inability to provide or support vessels throughout the life of the in-service phase of the contract (performance risk).	Actively manage and monitor performance under the contract through the partnering governance frame work and Quarterly Progress Reviews and as necessary exercise contractual remedies.
There is a chance that FOC for the ACPB Class will be affected by the inbility of the contractor to meet the rectification schedule leading to an impact on cost and schedule.	Actively engage with the contractor to manage the remediation program and emergent work to ensure commitment to the schedule is maintained. Maintain direct oversight over contractor activities and consultation on program risk. **This risk has been retired as the Rectification Program was completed on schedule in December 2011.**
There is a chance that the FOC for the ACPB Class will be affected by RAN Operational Commitments leading to an impact on cost and schedule.	Open dialogue and regular meetings with Navy and the contractor to ensure operational requirements are considered during planning activities and managing the rectification schedule. Streamline the Operational Release process for the remainder of the Class.
There is a chance that the FOC date for the ACPB Class will be affected by delays in Navy approving Operational Release of the vessels.	Open dialogue and regular meetings with Navy to ensure commitment to the schedule is maintained. **This risk has been assessed as medium.**
Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
N/A	**N/A**

6.2 Major Project Issues

Description	Remedial Action
Completion of the ACPB Extended Rectification Periods.	HMAS GLENELG underwent an Extended Rectification Period in 2008 where all major build related defects were rectified. The modifications were trialled and refined during 2009 and a program is now underway to bring the remaining vessels up to the GLENELG product baseline. To date HMA Ships MARYBOROUGH, CHILDERS, ARMIDALE, LAUNCESTON, LARRAKIA, BATHURST and ALBANY have completed rectification work with the last vessel due to be completed in December 2011. **This issue has now been retired. The Extended Rectification Program was completed on schedule in December 2011 and all vessels have now been modified to the GLENELG product baseline.**

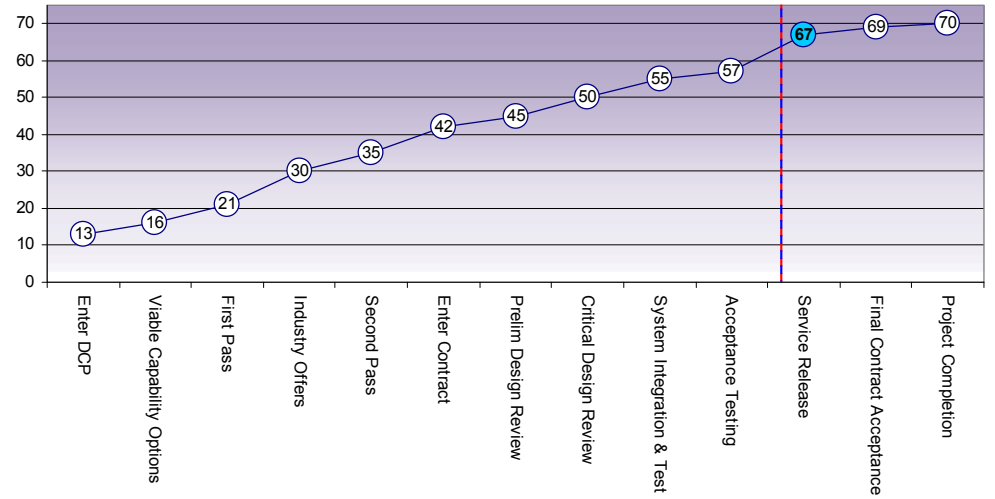
Installation of the modified fuel treatment and filtration systems.	The major cause of the original high pressure (HP) fuel pump failures was resolved by a combination of system redesign and revised operating procedures. Shrouds have been fitted to the fuel pumps to mitigate risk should a failure occur. Modified fuel oil purifier sets **have been fitted to eight vessels with the remainder expected to be completed by the end of 2012.** The cause of recent fuel pump failures thought to be a lack of lubrication is still being investigated; however, these failures are not related to the previously identified water in fuel problems. The OEM **is currently analysing the data collected during** the trial of a modified high pressure fuel pump on HMAS MARYBOROUGH.
Limitations on the use of ACPB Austere Accommodation due to Toxic Hazard.	**All vessels have completed the Extended Rectification Program where modifications to exhaust systems, black/grey water systems and H_2S and CO sensors were implemented. This has enabled Navy to lift the restrictions on the use of the Austere Accommodation Compartment on all vessels for appropriately trained Defence personnel.**
Sea Boat Davit performance does not meet contractual requirements.	An upgrade to the hydraulic pressure piping, davit hydraulics and power pack was completed on HMAS MARYBOROUGH; however, test results indicated that the modified system was still unable to meet the contracted ship specification. Due to the ongoing failure by AUSTAL to deliver an acceptable solution, DMS engaged a specialist hydraulic company to carryout system redesign and modifications. **As these modifications were unable to deliver a compliant system the Commonwealth agreed to accept a modified system that delivers a performance that enables safe sea boat launch and recovery operations under operational conditions. DMS has proposed a lesser lift rate of 0.3m/sec at 4500kgs, which Navy has stipulated as the minimum performance required for operations. Initial results from a hydrodynamic study of the proposed solution undertaken by the Director Navy Platform Systems to assess the operational risk at different sea states, indicate an increased risk of a sea boat swamping at higher sea states. Subject to final operational risk assessment and system acceptance the certification basis of the Davit Hydraulic System will be amended to the revised performance specification.**
A range of evaluations conducted on the ACPB training delivered by the contractor have consistently highlighted that the training management regime does not satisfy the ACPB contract with Defence.	DMS continues to make steady progress with the remediation of the deficiencies identified in ACPB training. **The Commonwealth has approved the new DMS Training Plan and has conducted assurance activities to verify contractual compliance of the plan and associated processes.** Revised curriculum for all courses has now been **approved** by the **Navy** Training Authorities. **The remaining main deficiency is the continued reliance on the ACPB platform to conduct training and lack of simulation training facilities.**

The reliability of the ACPB Propulsion System has been compromised by stern tube bearing failures which are significantly impacting on the vessels' availability.	**Deficiencies in design of the ACPB Propulsion System are impacting reliability. DMS has completed a detailed review of the ACPB shaft line and associated interfaces and has engaged a specialist engineering contractor to conduct an independent investigation into the recent stern tube bearing failures and the high level of corrosion being experienced within stern tubes on the ACPB. DMS is now developing an engineering package focusing on shaft alignment, bearing tolerances and lubricating water supply. Design of the required modifications should be complete by July 2012. The physical implementation of these modifications will extend into the second quarter of 2013. This issue is now part of the ACPB Remediation Plan that is addressing a range of issues to improve ACPB availability.**

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	10	9	10	10	10	9	9	67
Service Release	Project Status	10	9	10	10	9	8	9	65
	Explanation	• **Technical Difficulty:** The capability has been released for operational use but FOC has not yet been achieved and some elements of contract delivery remain outstanding. • **Commercial:** Some contracted requirements against acquisition contract remain outstanding and performance against the Materiel Acquisition Agreement and Materiel Sustainment Agreement is broadly satisfactory.							



2010-11 DMO MPR Status - - - -

2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
For a new or significantly modified design there will be a number of design changes emanating from initial sea trials. The aggressive delivery schedule for the ACPB did not allow time for changes from initial sea trials to be built into the follow-on build boats prior to their construction. This resulted in an evolving design baseline throughout the production phase that was not stabilised until after delivery of the last boat. Consequently the redesign, build, test and acceptance aspects of boats built after the first of class became unnecessarily complicated, expensive and inefficient. Time should be allowed after the first (or second depending on the size of the class) boat build to conduct sea trials and modify and stabilise the design as appropriate prior to the main production run.	First of Type Equipment
Failure at project inception to articulate, tailor and agree naval standards to be applied to a ship designed and built to commercial 'Classification Society' standards has resulted in considerable debate and potential cost increase.	Requirements Management
An acquisition strategy combining the acquisition and support of the fleet in one single contract rather than the traditional acquisition model followed by a separate support contract can lead to significant disputation and complications in closing out latent defects where the prime contractor is not also the builder. Invariably, once the capability is delivered and being operated and the contract is into the sustainment phase, there is a greater reluctance on the part of the prime contractor to progress rectification of build-related defects that may result in a cost to the contractor and disputation with the builder.	Contract Management
The ACPB **In Service Support (ISS)** contract is principally a 15 year fixed price contract with the option for a 5 year extension. Existing contract provisions provide no incentive to the contractor to improve or implement changes in the delivery of support activities that would deliver benefits/savings to both the contractor and the Commonwealth. In particular, there is no incentive to make savings over the life of the contract that would generate a reduction in the ISS Fee. Incentives need to be built into contracts beyond the acquisition phase.	Contract Management

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	RADM Peter Marshall
Branch Head	Mr Alan Evans
Project Director/Manager	Mr Frank Kresse

Project Data Summary Sheet[251]

Project Name	**COLLINS REPLACEMENT COMBAT SYSTEM**
Project Number	**SEA 1439 Phase 4A**
Capability Type	Upgrade
Service	Royal Australian Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Sep 02
Total Approved Budget (Current)	**$449.9m**
2011-12 Budget	**$4.7m**
Project Stage	Service Release
Complexity	ACAT IV

Section 1 – Project Summary

1.1 Project Description

The SEA 1439 Phase 4A Replacement Combat System (RCS) project was established to provide each of the Royal Australian Navy (RAN) *COLLINS* Class submarines with the United States (US) Navy (USN) Tactical Command and Control System, minor improvements to the combat system augmentation sonar, and shore facilities for integration, testing and training. Shore based systems are located at the Submarine Training and Support Centre at HMA Submarine STIRLING (WA) and a reference laboratory in the US at the Naval Undersea Warfare Centre. The project required the development of system commonality between the RAN and USN.

1.2 Current Status

Cost Performance

As at 30 June 2012, project SEA 1439 Phase 4A has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

Project boat installations are consistent with the approved Materiel Acquisition Agreement (MAA) schedule; however, each installation is dependent on the Full Cycle Docking (FCD) program, consequently completion dates vary according to boat availability. The RCS schedule has also been impacted by emergent work during each submarine docking. The final boat installation is scheduled for completion in 2015, with Final Materiel Release (FMR) in January 2016.

[251] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

Materiel Capability Performance

The RCS baseline (CS04) installed in HMA Submarines WALLER and FARNCOMB was approved for Initial Operational Release (IOR) by Chief of Navy (CN) in May 2008 and September 2009 respectively. CN subsequently approved Operational Release (OR) of that baseline in December 2009. The capability delivered in WALLER and FARNCOMB is consistent with that identified in the project. Sonar towed array trials scheduled for DECHAINEUX were completed with OR of the COLLINS Towed Array Processor (CTAP) being awarded on 20 January 2011.

Installations and Harbour Acceptance Testing for the upgraded combat system baseline installed in DECHAINEUX were completed in February 2010. Installation of **the upgraded** baseline in HMA Submarine**s** SHEEAN **and RANKIN is** progressing consistent with the FCD schedule. **Installation in HMA Submarine COLLINS will be completed in conjunction with the FCD program.** The project schedule is dependent on **the** boat FCD **program,** consequently the completion date may vary. IOR of the **upgraded** baseline as installed in DECHAINEUX, scheduled for December 2010, was finalised by the project office in August 2010. With completion of the external review process IOR approval occurred on 8 March 2011.

IOR marks the point at which the RAN is satisfied that the capability is fit for purpose and when management passes from Defence Materiel Organisation (DMO) to the RAN. Following IOR the capability enters a period of Navy Operational Test and Evaluation (OT&E) to determine the performance boundaries and if the capability is suitable for OR.

OR is the milestone which represents the In-Service date at which CN is satisfied that the equipment is in all respects ready for operational service.

1.3 Project Context

Project	Explanation
Background	Risks associated with rapid technology change have been treated by adopting a project management strategy that aligns with the US continuous update program and its two-year update cycle. The standard DMO acquisition approach was adapted to enable the project office to establish itself as prime contractor with a series of Integrated Project Teams working at various levels within DMO and industry. This role has required close collaborative relationships to be formed between the DMO, the USN and industry partners in Australia and the US. By adopting an innovative approach, the project developed a successful acquisition strategy for managing the difficult situation of merging rapidly changing and sensitive US technology with the existing Australian platform sensors, and other submarine infrastructure. This also includes complex constraints associated with International Traffic in Arms Regulations (ITAR) and the export control of US military equipment. In July 2001 the Minister for Defence terminated the original tender process for the *COLLINS* Class RCS and made the following announcement: "The Government has decided that a comprehensive arrangement with the USN on submarine issues is in Australia's best strategic interests and has therefore decided that the selection of the combat system for the *COLLINS* Class submarines cannot proceed at this time." In September 2002 the Government approved the Project based on the procurement of the following off-the-shelf sub-systems: • the US Tactical Command and Control sub-system, consisting of the Combat Control System and the *Virginia* Class Weapons Integration Panel, to be acquired by Foreign Military Sales (FMS); • minor improvements to the sonar processing solution currently installed in HMA Ships SHEEAN and DECHAINEUX as part of the Combat System Augmentation initiative; and • other system support infrastructure and project support. The USN Tactical Command and Control System is being supplied under an Armaments Cooperative Project which provides for system upgrades developed on a bi-annual basis. The project will provide one system baseline for the first two submarines and a later baseline for the remaining four submarines. These initial baselines will be upgraded at some later date as a sustainment activity. Australian systems are being provided under a combination of contracts. The main

	Australian contractors include ASC Pty Ltd, Raytheon Australia, Thales Australia and Sonartech Atlas Pty Ltd. Installation is being undertaken in conjunction with SEA 1429 Phase 2 Heavyweight Torpedo and at locations in South Australia and Western Australia. Installation in all submarines is coordinated with the submarine docking program and is currently scheduled to complete in 2015. The combat system capability enhancement required a significant change to submarine infrastructure that could only be achieved during a major docking. Furthermore, to ensure the required submarine availability was not impacted adversely and to work within the existing workforce at ASC, it was necessary to couple the installation program to the existing submarine docking program. Although there are significant benefits in coupling the RCS installation schedule to the submarine docking program, that coupling has dictated the delivery schedule of the RCS capability.
Uniqueness	The Commonwealth has undertaken the functions of a prime systems integrator. This role placed additional pressure on the Commonwealth project team to manage and coordinate a number of separate contracts and ultimately the integration, installation and testing of the delivered products. Participation in a Joint Development Program with the USN to introduce hardware and software upgrades for Tactical Command and Control System and implementing that evolving system baseline into RCS.
Major Challenges	Changes to the submarine docking program challenge the completion of the RCS installation schedule. This is being managed by engaging with the RAN to maximise compatibility between the submarine docking cycle and installation schedules.
Other Current Projects/Sub-Projects	SEA 1439 Phase 1-6**:** Following completion of SEA 1114 (Submarine Build Program) it was planned to address the remaining discrete upgrades and material deficiencies identified under that program through SEA 1439. There are six phases of project SEA 1439 constituting studies, replacement, and enhancement and improvement programs. The **other current** phases, excluding project Phase 4A RCS are: • Phase 3 Reliability and Sustainment Improvement**; and** • Phase 4B Weapon and Sensor Enhancement Program**.**

1.4 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1429 Phase 2 Replacement Heavyweight Torpedo System	To acquire a replacement Heavyweight Torpedo for the *COLLINS* class submarine to replace the USN Heavyweight Torpedo currently in service with the RAN.	Required to provide Heavyweight Torpedoes compatible with RCS.
SEA 1430 Phase 2A Navigation Display Systems	To provide Electronic Chart Display and Information Systems for the navigation of RAN ships and submarines. The project also delivers Navigation Display Systems to selected command and training shore establishments.	Navigation Display System installed in conjunction with RCS.
SEA 1439 Phase 5B2 COLLINS Class Improvement Program	To provide *COLLINS* Class Submarines with a replacement communications centre and a High Data Rate communications capability, and to provide the *COLLINS* Class Submarines with an upgrade to the Sub-Microwave Electronic Support Measures.	Possible inclusion of Tactical Data Link.
SEA1439 Phase 6 Sonar Improvement Program	To upgrade the existing sonar system in the *COLLINS* Class Submarines through a program of replacement and improvement.	Sonar tracking and analysis data passed to the RCS.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Sep 02	Original Approved		455.3	
May 03	Real Variation – Transfer	(0.9)		1
Aug 04	Real Variation – Budgetary Adjustments	(0.8)		2
			(1.7)	
Jul 10	Price Indexation		56.5	3
Jun 12	Exchange Variation		**(60.2)**	
Jun 12	**Total Budget**		**449.9**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – US Government (FMS)	(79.2)		4
	Contract Expenditure – US Government (ACP)	**(58.1)**		5
	Contract Expenditure – Raytheon Australia	(99.2)		
	Contract Expenditure – Thales Underwater Systems	(26.5)		
	Contract Expenditure – Sonartech Atlas	(26.8)		
	Other Contract Payments / Internal Expenses	**(135.7)**		6
			(425.5)	
FY to Jun 12	Contract Expenditure – US Government (FMS)	**(0.1)**		
	Contract Expenditure – US Government (ACP)	**(0.5)**		
	Contract Expenditure – Raytheon Australia	**(0.9)**		
	Contract Expenditure – Thales Underwater Systems	**(0.1)**		
	Contract Expenditure – Sonartech Atlas	**(0.0)**		
	Other Contract Payments / Internal Expenses	**(2.3)**		**7**
			(3.9)	
Jun 12	**Total Expenditure**		**(429.4)**	
Jun 12	**Remaining Budget**		**20.5**	

Notes	
1	Transfer to DSTO.
2	Administrative savings harvest.
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $55.5m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $1m having been applied to the remaining life of the project.
4	The FMS case value is $79.2m (written back from $143.9m - see Note 1 in Section **2.3** below). The supplies remaining under the most significant FMS case would then be delivered under the Armaments Cooperative Project (ACP).
5	The ACP is the main vehicle for supplying equipment and services for the Tactical Command and Control hardware and software development.
6	Other expenditure of **$135.7m** includes an amount of **$45.9m** to ASC for platform design and installation (under the Through Life Support Agreement - Submarine Sustainment Contract); a total of **$42.5m** on supplies and services provided by other Contractors. The remaining expenditure comprises: operating expenditure, consultants, contingency.
7	The amount of **$2.3m** is predominantly ASC Pty Ltd contract with remainder as sundry contractor

	services.

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The Year End variance is due to some project activities being postponed to next FY, including Data Digitisation and some of the Integrated Logistic Support activities.**
			Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(0.8)	Commonwealth Delays	
4.7	**3.9**	**(0.8)**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 (current) $m **(Note 1)**			
US Government (FMS)	Jun 03	143.9	79.2	Fixed	FMS	**2**
US Government (ACP)	Nov 04	92.7	121.0	Fixed	ACP	**3**
Raytheon Australia	Aug 03	53.9	101.6	Variable	ASDEFCON Strategic	**4**
Thales Underwater Systems	Oct 03	22.9	26.47	Variable	ASDEFCON Strategic	
Sonartech Atlas	Jun 03	22.5	35.76	Variable	ASDEFCON Strategic	

Notes	
1	**Base date dollars have not been provided for this project. As the prime systems integrator the Commonwealth has, as a risk management strategy, undertaken a process of incremental contracting, by way of both new contracts and changes to existing contracts, for work packages as they are defined. This strategy results in varying base dates for work packages contracted by each contract change. In particular, the materials component of any contract change is struck in current prices and not linked to the contract base date. As a result expressing real price increases/decreases at a total prime contract level in base date dollars is not feasible.**
2	Included on-going involvement in the Tactical Command and Control hardware and software development process for the duration of the MOU. The FMS Case valued at $143.9m was written back to $79.2m with the introduction of the Armaments Cooperative Project (ACP).
3	Includes on-going involvement in the Tactical Command and Control hardware and software development process for the duration of the MOU. The ACP value was increased from $92.7m and subsequently to approximately $121m to support system changes and replacement of the Multi-Tube Weapon Simulator. The ACP incorporates elements from SEA 1429 Phase 2-Heavyweight Torpedo and Combat System Sustainment. The SEA 1439 Phase 4A component of the original $92.7m was $51.8m and has a current value of $68.7m.
4	Includes on-going involvement in the Tactical Control and Command hardware and software development process for the duration of the Memorandum of Understanding (MOU). This contract also provided for the integration of Electronic Chart Display Information System (ECDIS) master navigation into the combat system at a cost of $2.8m which was not funded by SEA1439 Phase 4A.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
US Government (FMS)	7	7	US Tactical Control Command Subsystem	
US Government (ACP)	7	7	US Tactical Control Command Subsystem	

Raytheon Australia	7	7	Tactical System sub-systems and components	
Thales Underwater Systems	7	7	Scylla Sonar and associated sub-systems	
Sonartech Atlas	4	7	Sonar subsystem equipment	1

Major equipment received and quantities to 30 Jun 12

Six RCS Ship Sets delivered. Category 5 Sea Acceptance Testing completed. Engineering and maintenance arrangements established.

Notes

1	The RCS project was funded originally for quantity four Submarine Acoustic Transitory Event Processing System units. The in-service support organisation took advantage of an option in the RCS project acquisition contract with Sonartech to replace the ageing Submarine Acoustic Transitory Event Processing System units fitted to the existing submarine combat system. Although the contract value was increased, the additional sets were not funded from project funds.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Combat System	Nov 04	N/A	Nov 04	0	1
System Design	Combat System	May 05	N/A	May 05	0	1
Preliminary Design	20 Separate sub-systems or major components	Oct 03 – Oct 06	N/A	Nov 03 – Oct 06	1	1
Critical Design	20 Separate sub-systems or major components	Nov 03 – Apr 07	N/A	Nov 03 – Apr 07	0	1,2

Notes

1	The above data represents rolled up information as the project consists of many subsystems each of which have independent Preliminary Design Review, Critical Design Review or associated activities. Additionally, these system engineering activities were applied across two system baselines. As a result, there were many individual events within each of the above activities where the schedule was allowed to move provided the critical path for the delivery of capability was not impacted adversely. The critical path was based on the submarine docking program. Although some individual activities were ahead or behind schedule the project has maintained the critical path as defined by the submarine FCD program. In some instances slippage has occurred as a result of project management intervention to delay finalisation of sub-system and major component design until the evolving US Tactical Command and Control system baseline was mature. The project schedule has been re-baselined following significant events. To progress the Preliminary Design Review and Critical Design Review activity ahead of the US system development would have incurred significant impairment cost. Preliminary Design Review and Critical Design Review slippage has not impacted capability delivery because of the dependency on the submarine docking program to install the RCS equipment.
2	Some sub systems or major components have several Critical Design Reviews or US equivalent.

3.2 Contractor Test and Evaluation Progress

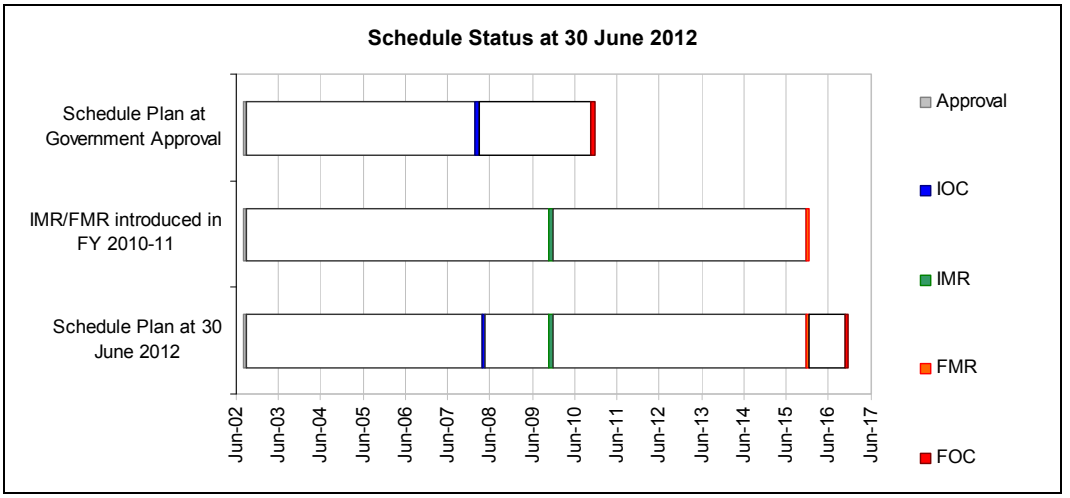
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Combat System - System Integration Test Phase 1-6	Jun 06 - Apr 08		Jun 06 - Apr 08	0	
	Combat System - Harbour Acceptance Trials Stage1-3	Nov 06 - May 08		Nov 06 - May 08	0	
	Combat System-Sea Acceptance Trials Stage 1-2	Dec 07 - Jun 08		Dec 07 - Jun 08	0	
	Category 3 System Integration Testing Combat System	Apr 09		Apr 09	0	

	CS05.00.01 (TI06/APB06)					
	Category 4 Harbour Acceptance Testing Combat System CS05.00 (TI06/APB06)	Nov 09		Dec 09	1	1
	Category 3 System Integration Testing Combat System CS05.01 (TI06/APB06)	Jan 09		Jan 09	0	
	Category 4 Harbour Acceptance Testing Combat System CS05.01 (TI06/APB06)	Feb 10		Feb 10	0	
	Category 5 Sea Acceptance Trials Combat System CS05.01 (TI06/APB06)	Apr 10		Aug 10	4	1

Notes	
1	Combat System CS05.01 baseline Sea Acceptance Trials and associated shore based analysis were completed in August 2010. The variance for CAT 4 & CAT 5 testing is due to HMA Submarine DECHAINEUX's FCD schedule delays and the need to complete additional testing of the Towed Array (TA) (previously delayed because of non project related equipment malfunction) and the ECDIS. The ECDIS and the TA increased the scope of the subsequent CAT 5 trials. Combat System CS05 baseline Sea Acceptance Trial tests were conducted in two stages to account for weather, submarine defects and support vessel defects. In general, the project test and evaluation program was carried out in conjunction with other post docking activities and the planned testing schedule has been impacted to some extent. The outcome of the CS05.01 trials including the ECDIS and TA were successful, with some minor trouble reports noted but not affecting capability. The CS05.01 System Design Certificate was issued 10 September 2010. CS05 Initial Materiel Certification (IMC) for DECHAINEUX was achieved 22 September 2010. CS05 Initial Operational Release (IOR) was awarded by Chief of Navy on 8 March 2011. Operational release of the CS04 COLLINS Towed Array Processor (CTAP) was awarded on 20 January 2011.

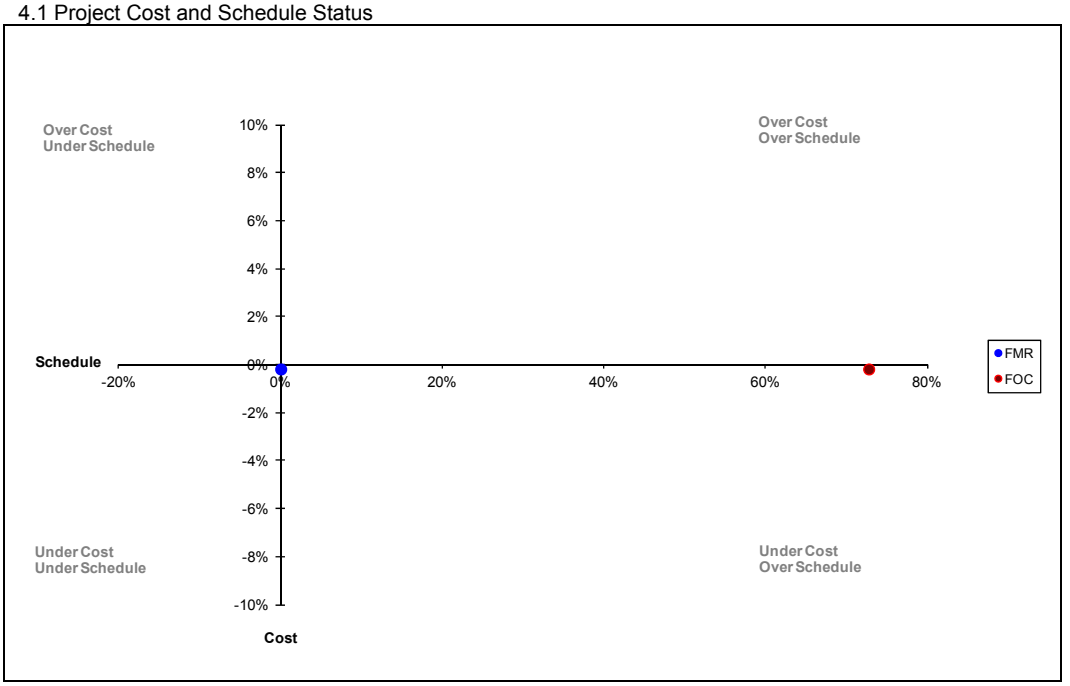
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Dec 09	**N/A**	The RCS baseline (CS04) installed in HMA Submarines WALLER and FARNCOMB was approved for IOR by CN in May 2008 and September 2009 respectively. CN subsequently approved OR of that baseline on 9 December 2009. The capability delivered by the project is consistent with the MAA.
Initial Operational Capability (IOC)	Mar 08	May 08	2	
Final Materiel Release (FMR)	Jan 16	Jan 16	**0**	
Final Operational Capability (FOC)	2010	2016	Up to 72	WALLER and FARNCOMB have achieved OR and are awaiting confirmation by the Capability Manager that other FIC are complete. FOC date was set at project approval before the submarine FCD programme had reached maturity in terms of the length of dockings and impact of emergent work and other capability upgrades. As a result, the RCS installation schedule has been delayed. The project has been able to recover some schedule following the promulgation of the Integrated Master Schedule. However, there is no opportunity to recover the original schedule. The final installation will be completed in COLLINS in May 2015, with FOC currently expected to occur in 2016.



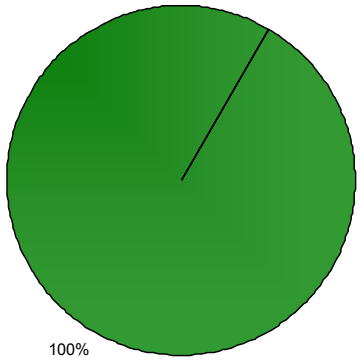
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	**Green:** CAT5 sea trials for CS04 completed in July 2009. CS04 installed in WALLER and FARNCOMB. CS05 installed and CAT 5 sea trials have been completed with full analysis completed in August 2010. **Amber:** N/A **Red:** N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a risk that delays to the submarine docking program as a result of higher operational priorities or material defects will adversely affect the Project platform integration program creating schedule delays and cost increases.	**This risk is being mitigated by:** • **Active and frequent engagement with SUBFOR, PNR and ASC project management and commercial staff to ensure that any proposed changes to planned maintenance activities properly consider the potential impact on project schedule and/or cost.** • **Through DSMP and DGCA, the project team ensures that when considering changes to the Collins Integrated Master Schedule, committees such as the ASPO IPT, the Sustainment Control Board and the Program Review Board are properly informed about potential impact on project schedule/cost.**
Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
There is a chance that productivity of the project team will be affected by a turnover of key personnel, leading to an impact on cost and schedule.	**This risk is being mitigated by:** • **Recruitment of appropriately skilled staff to fill vacant positions;** • **Training of staff to maintain requisite skills and knowledge;** • **Engaging with project stakeholders and Submarine Branch resources to mitigate loss of corporate knowledge; and** • **Engagement of contractors for specific tasks where expertise is not available in house.**

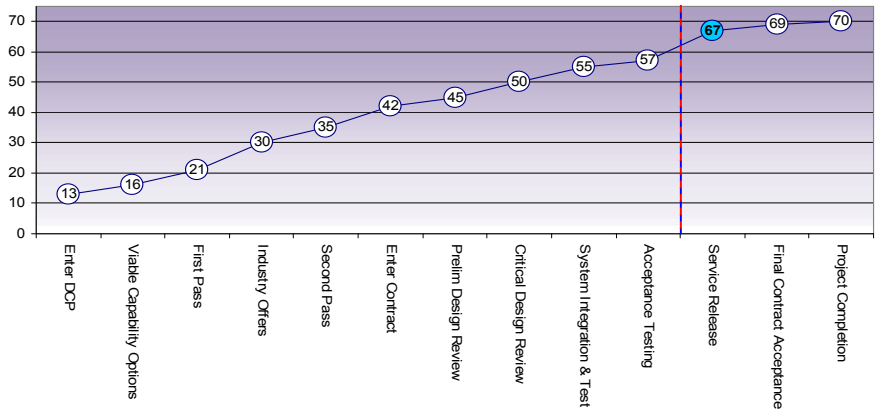
6.2 Major Project Issues

Description	Remedial Action
N/A	**N/A**

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	10	9	10	10	10	9	9	67
Service Release	Project Status	9	**9**	9	**8**	9	9	9	62
	Explanation	• **Schedule:** The last boat installation for the project to achieve FMR is HMA Submarine COLLINS, which has its FCD scheduled to complete in May 2015. FCD timings have changed substantially in the past, however with the introduction of a CM controlled COLLINS IMS, the project is now confident that schedule will be met. • **Requirements, Technical Understanding and Technical Difficulty:** These elements are slightly lower than the benchmark to reflect that the final version of software (APB 07) being developed under the Project has not yet been fully tested and installed which is scheduled for mid **2012**. Additionally the technical understanding is at variance because transitioning of CS05 into service for HMA submarine DECHAINEUX has not yet occurred and is planned for late **2012**. Transitioning of the final baseline on HMA Submarine COLLINS is expected in early 2016.							



2010-11 DMO MPR Status - - - -	2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Ensure that adequate staffing is available, in particular if DMO is to be the prime system integrator.	Resourcing
Ensure that all project dependencies are established before schedule is established.	Schedule Management
Identify all requirements for technical data and technology as early as possible in the project to allow the transfer requests to be administered. US International Traffic in Arms Regulation can require up to a year to progress.	Requirements Management
Engaging in a joint development project where Australia is the junior partner can introduce project management, cost, technology and schedule risk that needs to be addressed.	First of Type Equipment

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	**Mr Andrew Cawley**
Division Head	AVM Chris Deeble
Branch Head	**Mr David Cochrane**
Project Director	**Mr David Connolly**
Project Manager	**Mr Walt Daly**

Project Data Summary Sheet[252]

Project Name	**INDIAN OCEAN REGION UHF SATCOM**
Project Number	**JP 2008 Phase 5A**
Capability Type	Upgrade
Service	Joint Services
Government 1st Pass Approval	March 09
Government 2nd Pass Approval	March 09 and March 10
Total Approved Budget (Current)	**$432.5m**
2011-12 Budget	**$35.3m**
Project Stage	System Integration and Test
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

This project will provide the Australian Defence Force (ADF) with twenty 25kHz UHF SATCOM channels on a hosted payload on a commercial Intelsat satellite (IS-22), to provide coverage of the Indian Ocean Region (IOR), and associated ground infrastructure to provide network control upgrades and data channel increases.

1.2 Current Status

Cost Performance

As at 30 June 2012, project JP 2008 Phase 5A has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

The IS-22 satellite **launched on 25 March 2012 and remains on schedule to** meet Government requirements of the project, with a number of crucial **orbit** activities **completed** in order to successfully realise the scheduled launch.

Materiel Capability Performance

The IS-22 satellite is currently meeting all performance measures, including:

- the hosted payload,
- the Communications System Monitor (CSM).

The Network Control Systems (NCS) **contract was executed on 16 May 2012, factoring United States requirements of Defense Information Systems Agency (DISA) and Space and Naval Warfare System Command (SPAWAR). The implementation strategy was reported to Government.**

[252] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

1.3 Project Context

Project	Explanation
Background	The JP2008 Phase 5 project was created to provide capability originally planned for under the JP2008 Phase 4 Next Generation SATCOM Capability project (a result of Phase 4 of the project being re-scoped to provide access to the Wideband Global Satellite (WGS) capability). UHF SATCOM provides critical tactical radio coverage over the Middle East Area of Operations (MEAO), particularly to Special Forces in Afghanistan. Current coverage is provided by leases on two commercial satellites and channels loaned by the United States (US) Government on an availability basis, which has proven to be significantly less than the capability needed by the ADF. This project was also formed on the basis that LEASAT 5 would reach end of life in 2011. LEASAT 5 now has an extended life beyond 2013 due to a change in orbital location, however, only a single channel is available on LEASAT 5. A market survey was conducted in September 2008 to inform cost and capability options for JP 2008 Phase 5. It revealed an opportunity for Defence to host a payload on an Intelsat commercial satellite over the region in mid 2012. A Restricted Request For Tender (RFT) was subsequently let to ten companies for the capability in November 2008 and Intelsat was selected as the preferred tenderer. Combined first and second pass Government Approval was given in March 2009 and a contract was signed with Intelsat for eight 25 kHz channels and 15 years support in April 2009. First pass Government approval was given in March 2009 for the project to pursue a Memorandum Of Understanding (MOU) with the US to provide global UHF SATCOM coverage using US satellites in return for access to ten 25 kHz channels on IS-22. A subsequent second pass approval was given in March 2010 which allowed the project to procure the full payload on IS-22. Defence also successfully completed a similar project under JP2008 Phase 3D in 2003 which was the procurement of a hosted payload on the Optus C1 satellite.
Uniqueness	The contract with Intelsat is based on the standard DMO ASDEFCON template; however, it required significant tailoring based on input from specialist space lawyers. There are also a number of unique aspects to a contract for a Satellite, including the unusual risk profile of the Launch and the corresponding high degree of schedule uncertainty which is typical of a satellite program where product quality requires a high priority. **A UHF Channel Control system will be designed and developed to meet the requirements of the Australian and United States forces.**
Major Challenges	A major challenge for the project resulted from a compressed Government approval process, which impacted on the timely generation of the Capability Development Documentation (CDD) suite. This compressed approvals process also meant that ancillary parts of the capability such as the NCS were not fully considered for cost and schedule as would have occurred if a full first to second pass process had occurred. Notwithstanding this, these sub-systems represent relatively small parts of the capability and cost of the project. The major challenges in the last 12 months have related to the ground systems. The project released an RFT in December 2010 for the NCS but no successful tenderers were found. The project is now replanning this activity to meet the requirement in time to support in orbit operations of the IS-22 satellite. **The delivery of an integrated UHF NCS system that meets the operational needs of both the ADF and the United States.**
Other Current Projects/Sub-Projects	**JP2008 Phase 3E Advanced SATCOM Terrestrial Infrastructure System:** This project provides the supporting ground infrastructure for Satellite Communications including UHF, X and Ka band communication services. **JP2008 Phase 3F ADF SATCOM Terrestrial Enhancements:** This project will provide the mature Australian Western Seaboard anchoring capability for the WGS constellation. **JP2008 Phase 4 Next Generation SATCOM Capability:** Provision of WGS.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Feb 09	Original Approved		4.0	
Apr 09	Real Variation – Government Initial 2nd Pass Approval	269.1		
Apr 10	Real Variation – Government **Subsequent** 2nd Pass Approval	187.8		
			457.0	1
			461.0	
Jul 10	Price Indexation		**18.0**	2
Jun 12	Exchange Variation		**(46.5)**	
Jun 12	**Total Budget**		**432.5**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – Intelsat Prime	**(240.1)**		
	Other Contract Payments / Internal Expenses	**(6.8)**		3
			(246.9)	
FY to Jun 12	Contract Expenditure – Intelsat Prime	**(53.2)**		
	Contract Expenditure – NCS Prime	**(4.1)**		
	Other Contract Payments / Internal Expenses	**(7.6)**		**4**
			(64.9)	
Jun 12	**Total Expenditure**		**(311.8)**	
Jun 12	**Remaining Budget**		**120.7**	

Notes	
1	**The Initial 2nd Pass Approval was for 8 channels and the Subsequent 2nd Pass Approval was for the remaining 12 channels of the hosted payload.** This figure does not sum precisely due to rounding.
2	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $16.5m. In addition to this amount, the impact on the project budget as a result of out-turning was a further ($19.6m) having been applied to the remaining life of the project. **For this project, that process was incorrectly executed but corrected in January 2012 by returning $30.9m to the budget; $21.1m and $9.9m for impacts of price and exchange variations respectively.**
3	Other expenditure comprises project operating expenditure not attributable to the aforementioned contract.
4	**Other expenditure comprises hardware purchases ($6.2m) and operating costs ($1.5m).**

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**Phase 5A over-achieved its budget by 84% in FY 11/12. This was due to the In-Orbit test milestone for the IS-22 Contract valued at $27.0m being accepted and the payment made as a strategic opportunity in FY 11/12. Additionally the NCS prime contract Effective Date milestones which were $3.4m higher than what was budgeted for in FY 11/12 were accepted and payment made. This overspend was partially offset by an underspend in operating costs ($0.5m) and in Workforce Operating Expenditure allocation that could not be expended due to staff shortages ($0.3m).**
		3.4	Overseas Industry	
			Local Industry	
		27.0	Brought Forward	
			Cost Savings	
			FOREX Variation	
		(0.8)	Commonwealth Delays	
35.3	**64.9**	**29.6**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
Intelsat	Mar 09	202.5	422.9	Firm	ASDEFCON (COMPLEX)	
NCS	**May 12**	**36.5**	**36.5**	**Firm**	**ASDEFCON (COMPLEX)**	

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
Intelsat	8	20	25kHz UHF SATCOM channels on IS-22 Hosted Payload	

Major equipment received and quantities to 30 Jun 12

All 20 channels were delivered successfully on the 25 May 2012 and are now operational.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	IS-22 Hosted Payload	Jun 09	N/A	Jun 09		
Preliminary Design	IS-22 Hosted Payload	Nov 09	N/A	Oct 09	(1)	
	CSM	Oct 10	N/A	Nov 10	1	1
Critical Design	IS-22 Hosted Payload	Sep 10	N/A	Sep 10		
	CSM Critical Design Review	Mar 11	N/A	Mar 11		

Notes

1	The review was conducted in October 2010 but Approval by the Project Office did not occur until November 2010 due to a number of issues with requirements traceability that required rectification.

3.2 Contractor Test and Evaluation Progress

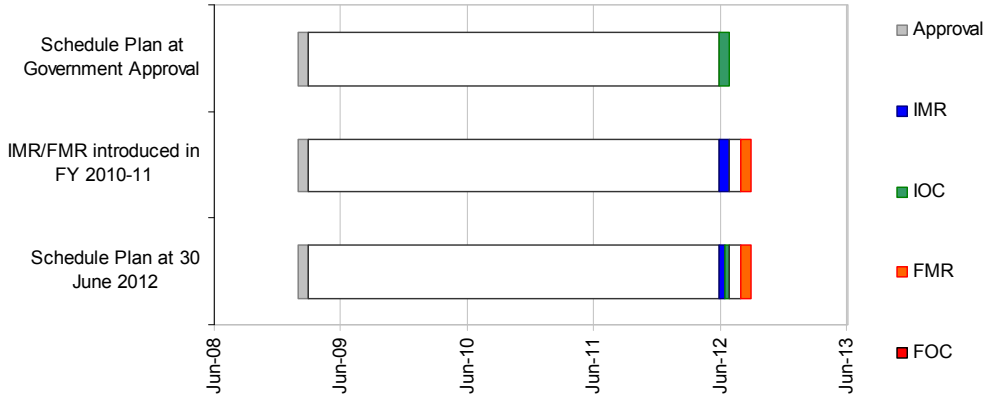
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	IS-22 Hosted Payload	Nov 10	N/A	Feb 11	3	1
	CSM	Sep 11	N/A	**Oct 11**	**1**	**2**
Acceptance	IS-22 Hosted Payload	Jun 12	N/A	**May 12**	**(1)**	**3**
	CSM	Jul 12	N/A	**Jun 12**	**(1)**	**3**

Notes	
1	Delay to commencement of integration was driven by a number of delays in sub system deliveries including C and Ku antennas (not forming part of this capability) and the UHF antenna. Margin in the schedule has been used to ensure these delays do not delay the Final Acceptance milestone.
2	**While installation commenced in September 2011, testing to confirm that the installation met requirements was undertaken in October 2011.**
3	**IS-22 and CSM Acceptance 1 month ahead of schedule due to early achievement by Project Office.**

3.3 Progress Toward Materiel Release and Operational Capability Milestones

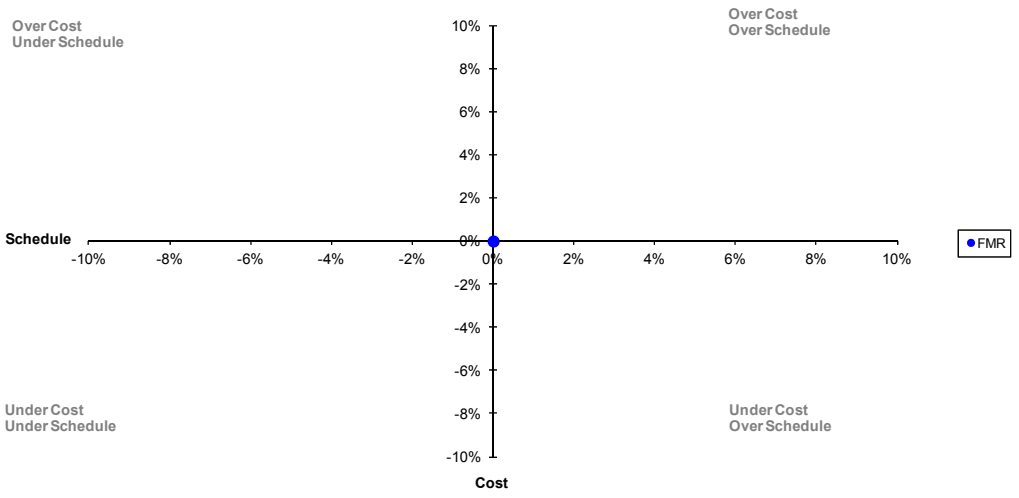
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Jul 12	Jul 12	0	**On track to meet IMR.**
Initial Operational Capability (IOC)	Jul 12	Jul 12	0	On track to meet IOC (coinciding with IMR).
Final Materiel Release (FMR)	Sep12	Sep 12	0	**On track to meet FMR.**
Final Operational Capability (FOC)	N/A	N/A	N/A	

Schedule Status at 30 June 2012



Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status

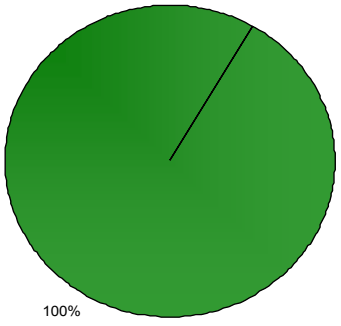


Note
FOC was not defined for this project and therefore only FMR is represented in this graph.

Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Green:

Material will meet overall performance requirements which are determined by the hosted payload.

Amber:

N/A

Red:

N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
In Orbit Test (IOT) & Acceptance Tasks identify reduced capability or total loss of capability - There is a risk that the system will incur a loss of capability due to a launch failure or satellite deployment failure leading to an impact on operational capability.	Contractor test program designed to minimise risk. Also insurance provides financial return in case of failure or reduced capability. **Risk retired due to Commonwealth Acceptance of the payload.**
There is a risk that the CSM will not be available for IS-22 IOT due to CSM program delays leading to delay in IMR.	**Risk retired due to design completion. Currently installed and ready for conducting IOT.**
There is a risk that other non-JP2008 projects will impact on JP2008 Ph5A installations at HMAS STIRLING due to: • Unknown site requirements until other building works are completed at site • Inability to implement changes in support of CSM due to conflicting requirements from other projects.	**Engaged** with HMAS STIRLING Configuration Control Board to ensure all requirements **were** known and scheduled. **Risk retired due to CSM installation completion.**
There is a risk the Project Office will not gain approval to **remotely** operate the CSM due to inability to gain necessary security accreditation leading to delay in IMR.	Engaging with Chief Information Officer Group (CIOG) to ensure system is designed to meet network security requirements.
There is a risk that the technical solution for the NCS provided by the Project will not meet Defence's full requirements.	**Risk downgraded to medium due to NCS contract signature.**
The risk is that the facility at HMAS STIRLING will not be completed by IS 22 Launch including installation of CSM.	**Risk retired due to complete installation of CSM.**
There is a risk that technical issues will be encountered during installation of the NCS, such as an error in cabling, delaying installation.	**Project Office undertook mitigation activities and included Problem Identification Reports (PIRs) in Information Communication Technology Business Requests (ICTBR).** **Risk retired.**
There is a risk is that Asbestos will be found on site at HMAS STIRLING delaying installation. The building is known to have asbestos, it has been reported that Asbestos has been removed from the switchboards however testing is required to confirm. It takes Defence approximately seven weeks from the raising of a submission to the commencement of work.	**Risk retired after Phase 1 facilities infrastructure was undertaken with NIL Asbestos found.**
There is a risk that Defence Communication Station (DEFCOMSTA) West cannot accommodate the Project equipment due to the inability to relocate existing equipment and people at HMAS Stirling, thus impacting schedule.	**Risk retired on completion of Phase 1 rack relocation with space now available for CSM rack. No mitigation costs were required.**
There is a risk that the current facilities **for NCS** are not fit for purpose or do not meet Building Safety and Design Requirements.	**Risk downgraded to medium due to change in likelihood with building activities nearing completion.**
There is a risk that due to there being a lack of an agreed set of requirements from Defence for the Reduced Radio Configuration, the project office will not be able to deliver a capability that is suitable.	A requirements review process will be implemented to align capability requirements to capability delivered.

There is a risk that the Project is impacted by the slow process in getting ICTBRs approved through Chief Information Officer Group.	**Risk retired after the Project Office engaged with CIOG to process the ICTBRs.**
Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
The training requirements are not clearly defined in the Projects scope of work. The current training is inadequate.	**Project Office has provided feedback to Contractor to make changes to training pack. Project is also running an additional payload course and conducting requirements review for all training.**
Risk that contractors are unable to provide contracted services due to bankruptcy, loss of staff, litigation etc.	**Utilise other potential suppliers.**

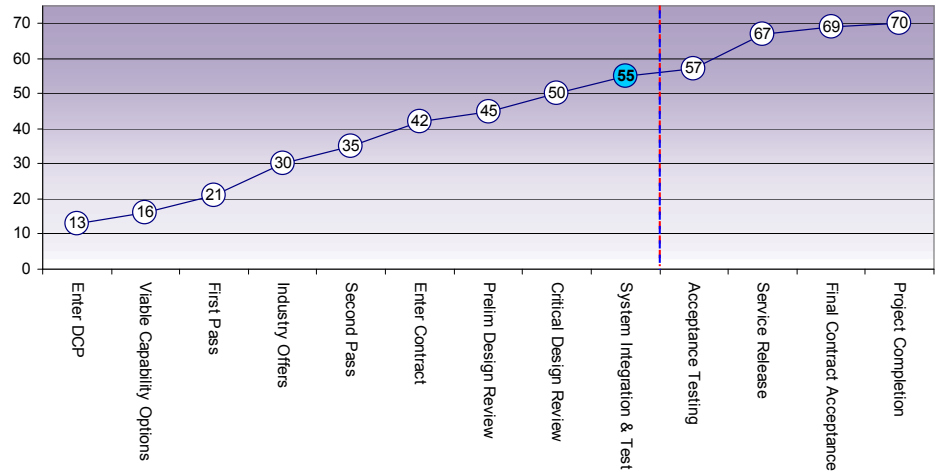
6.2 Major Project Issues

Description	Remedial Action
NCS Requirements are currently being refined as the Project improves its understanding of the Military Standards (MILSTDs).	**Issue retired after approval of new Project Acquisition Strategy which defines Capability Requirements rollout.**
NCS Delivery currently unclear due to the failure of the tender process to find a successful tenderer.	**Issue retired after approval of new Project Acquisition Strategy which defines Capability Requirements rollout and Project to act as prime systems integrator.**

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	8	7	8	8	8	8	8	55
System Integration and Test	Project Status	8	9	9	7	8	8	7	56
	Explanation	• **Cost:** IS-22 is essentially an off the shelf product on a firm fixed price contract which means the project is ahead of the benchmark. • **Requirement:** The essentially off the shelf nature of the IS-22 hosted payload means it is ahead of the bench mark for testing against the requirements. • **Technical Understanding and Operations and Support:** The project is lagging slightly in Technical Understanding and Operational support primarily due to Defence still developing the Concept of Operations for the capability.							



2010-11 DMO MPR Status - - - - -	2011-12 DMO MPR Status - - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
N/A	N/A

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Shireane McKinnie
Division Head	Michael Aylward
Branch Head	Ivan Zlabur
Project Director	Greg McKinnon

Project Data Summary Sheet[253]

Project Name	**REPLACEMENT HEAVYWEIGHT TORPEDO**
Project Number	**SEA 1429 Phase 2**
Capability Type	Replacement
Service	Royal Australian Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Jul 01
Total Approved Budget (Current)	**$425.1m**
2011-12 Budget	**$11.8m**
Project Stage	Acceptance Testing
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

This project is acquiring a Heavyweight Torpedo (HWT) for the Collins Class submarine to replace the United States Navy's (USN) Mk 48 Mod 4 HWT currently in service with the Royal Australian Navy (RAN). The torpedo is being supplied by the United States (US) Government under a Memorandum of Understanding (MOU), with work performed by Raytheon US and the US Naval Undersea Warfare Center (NUWC). The project is also acquiring associated logistic support, weapon system interface equipment, and operational support and test equipment. ASC Pty Ltd (ASC) is undertaking integration to the Collins Class submarine platform.

1.2 Current Status

Cost Performance

As at 30 June 2012, project SEA 1429 Phase 2 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

The HWT project consists of two separate components to deliver the full HWT capability to the RAN. The first component is the modification of each submarine to accommodate and launch the HWT; the second component is the spiral development of the HWT software.

Boat installations are consistent with the approved Materiel Acquisition Agreement (MAA) schedule; however, each installation is dependent on the Full Cycle Docking (FCD) program, consequently completion dates vary according to boat availability. The HWT schedule has also been impacted by emergent work, not related to HWT, during each submarine docking. As a result of these non project related delays, completion of the submarine modification program has slipped from 2010 to 2016.

[253] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

Development of the HWT software is progressing to schedule and the Spiral 1 software baseline has achieved Operational Release (OR). The next software baseline to be implemented by the RAN will be Advanced Processor Build (APB) 4 and that development is progressing to schedule.

The final weapons were delivered to Australia in January 2012.

Materiel Capability Performance

The replacement HWT with Spiral 1 software and the integration modifications to Collins Class Submarines were approved for OR by the Chief of Navy (CN) on 10 March 2010.

The replacement HWT with APB 4 software was approved for Initial Operational Release (IOR) by CN on 8 March 2011.

Operational Release is the milestone which represents the In-Service date at which CN is satisfied that the equipment is in all respects ready for operational service.

Platform modifications have been completed in HMA Submarines WALLER, FARNCOMB and DECHAINEUX and are progressing in concert with the FCD for SHEEAN **and RANKIN**. Platform modifications in HMA Submarine COLLINS will be completed in conjunction with the FCD program. As first of class specific testing was carried out for WALLER, all subsequent testing for platform modifications will be undertaken in conjunction with standard post docking testing.

1.3 Project Context

Project	Explanation
Background	Project SEA 1429 Phase 1 was approved in December 1997 to investigate the acquisition of an enhanced torpedo capability; including, weapon performance, integration, risk, costs, through-life support, intellectual property and Australian Industry Involvement. In September 1998 the US Government invited the Defence Capability Committee (DCC) to consider pursuing a collaborative development program for the Mk48 Advanced Capability (ADCAP) HWT as the replacement HWT for the RAN. The DCC, although noting the potential benefits, decided against the collaborative program in favour of a competitive tender process. The solicitation process, which included a Project Definition Study commenced in 1999, but was subsequently abandoned when the Government decided in July 2001 to terminate the process in favour of entering into a cooperative agreement with the US Government. A Statement of Principles outlining the strategic alliance between the RAN and USN on submarine related issues was signed in Washington DC in September 2001. At the same time, negotiations began with the US Government on a MOU to develop an Armaments Cooperative Project (ACP) for the joint development of the MK 48 ADCAP HWT. Under the MOU, the Commonwealth and the US Government joined in a partnership for the cooperative development, production, and through-life support of the Mk 48 ADCAP torpedo. A Joint Project Office was then established in Washington, DC. Development of the Mk 48 ADCAP Common Broadband Advanced Sonar System (CBASS) torpedo will result in a broadband sonar capability for enhanced target acquisition. In March 2003, following a Submarine Integration Study, Government approved the scope of the project and delivery of the supplies; including submarine integration with ASC, a Torpedo Analysis Facility (TAF) at the Defence **Science** and Technology Organisation (DSTO); and upgrades to the Torpedo Maintenance Facility (TMF). The TAF has been formally transitioned to DSTO. Upgrades to the TMF and the management responsibility for torpedo sustainment, has been transitioned to Navy Guided Weapons System Program Office. A Portable Tracking Range was completed in December 2006 and responsibility formally transitioned to Maritime Ranges System Program Office. The MOU has been extended for a period of ten years to 2019 following successful negotiation with the US Government.

Uniqueness	Commonwealth participation in a Joint Program with the US Government to develop, produce and support the Mk 48 Advanced ADCAP/CBASS torpedo, through an ACP, including evolving capability enhancements, introduced additional complexity to the project. The additional complexity included requiring effective coordination of requirements management, integration, testing, torpedo deliveries and their installation in each boat according to their respective FCD schedule. The performance of the ACP is overseen by an Executive Steering Committee with senior executives from both partners.
Major Challenges	Major challenges associated with the Project include the stability of the installation schedule when that schedule is dependent on the submarine FCD program. To date, emergent maintenance problems, not related to HWT, have resulted in significant slippage of the FCD program and, as a result, significant slippage in the SEA 1429 Phase 2 HWT Project installation programs. A second challenge is the management of the certification of the US developed Spiral software baselines for the torpedo within the Naval Technical Regulatory Framework. RAN operational schedules and priorities may also present a challenge to the testing program.
Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1439 **Phase 4A Collins Replacement Combat System**	Replacement Combat System	Installation of the Replacement Combat System is to be completed on each boat, including modifications for the replacement torpedo, prior to commencement of the torpedo installation program.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Jul 01	Original Approved		238.1	1
Mar 03	Real Variation – Scope	213.3		
Aug 04	Real Variation – Transfers	1.0		2
Sep 04	Real Variation – Budgetary Adjustments	(0.2)		3
			214.1	
Jul 10	Price Indexation		99.4	4
Jun 12	Exchange Variation		**(126.5)**	
Jun 12	**Total Budget**		**425.1**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – US Government Initial MOU	(194.9)		
	Contract Expenditure – US Government Follow-on MOU	**(26.4)**		
	Other Contract Payments / Internal Expenses	**(63.7)**		**5**
			(285.0)	
FY to Jun 12	Contract Expenditure – US Government Initial MOU	**(0.0)**		**6**
	Contract Expenditure – US Government Follow-on MOU	**(5.1)**		
	Other Contract Payments / Internal Expenses	**(3.4)**		**7**
			(8.5)	
Jun 12	**Total Expenditure**		**(293.5)**	
Jun 12	**Remaining Budget**		**131.6**	

Notes	
1	Heavyweight Torpedoes purchase under Armament Co-operative Project with the US.
2	Transfer from SEA 1429 PH1.
3	Administrative Savings Harvest.
4	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $91.5m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $7.9m having been applied to the remaining life of the project.
5	**Other expenditure of $63.7m includes an amount of $24.1m to ASC for platform design and installation (under the Through Life Support Agreement - Submarine Sustainment Contract); $3.7m paid to DSTO; $5.0m RCS/MOU USN; $3.2m to FMS Case (AT-P-GZU), and $10.0m to L3 Nautronics Pty Ltd. The remaining expenditure of $17.7m covered sundry operating expenditure.**
6	US Government Initial MOU is in the process of being closed and has no expenditure for FY **2011-12.**
7	**The amount of $2.0m is predominantly ASC Pty Ltd contract; $0.5m paid to DSTO with remainder ($0.9m) being for sundry contractor services and operating expenditure.**

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**Variance is due to cost savings during operational testing and cost savings achieved within the Joint Program with the US Navy.**
			Overseas Industry	
			Local Industry	
			Brought Forward	
		(3.3)	Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
11.8	**8.5**	**(3.3)**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
US Government Initial MOU	Mar 03	$336.7	$336.7	Fixed	MOU Agreement	1
US Government Follow-on MOU	Nov 09	$43.8	$50.8	Fixed	MOU Agreement	2

Notes	
1	US Government Initial MOU is in the process of being closed and has no expenditure for FY **2011-12**.
2	US Government Follow-on MOU was reported as $131.9m in the 2009-10 MPR, however, this figure included sources of funding other than SEA 1429 Phase 2. The Price Base at Signature has been revised to reflect the SEA 1429 Phase 2 contribution to the Follow-on MOU. An additional $6.1m to the SEA 1429 Phase 2 contribution to the Follow-on MOU was approved in July 2010.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
US Government Initial MOU	Classified	Classified	Heavyweight Torpedoes	
US Government Follow-on MOU	Classified	Classified	Heavyweight Torpedoes	

Major equipment received and quantities to 30 Jun 12
Spiral 1 Software baseline achieved. Platform modifications in three submarines completed.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Final Design Review	Weapon Handling & Discharge Training Rig Modifications	Jun 05		Oct 05	4	1
	Submarine Weapon Handling & Discharge System Modifications	Jan 06		Nov 06	10	1
Acceptance	Weapon Handling & Discharge Training Rig Modifications	Nov 05		Nov 07	24	1
	Submarine Weapon Handling & Discharge System Modifications	Mar 06		Jun 07	15	1
Design Review	MK48 ADCAP Torpedo Specification Compliance	Dec 07		Feb 08	2	1

	Explosive Ordnance Approval Process MK48 Mod 6 ACOT and Mod 7 CBASS HWT (Spiral 1)	Mar 08		Mar 08	0	1
	Explosive Ordnance Approval Process MK48 Mod 6 ACOT and Mod 7 CBASS HWT (APB 4 – Exercise)	Nov 12		Feb 11	(21)	1
	Explosive Ordnance Approval Process MK48 Mod 6 ACOT and Mod 7 CBASS HWT (APB 4 – Warshot)	Jul 13	Jul 13		0	
Incorporation Approval	Weapon-Collins Combat System (AN/BYG-1 (V8)) Compatibility Certificate SMCSPO 0094 Version 1.0 1 May 08 (Spiral 1)	May 08		May 08	0	2
	Weapon-Collins Combat System (AN/BYG-1 (V8)) Compatibility Certificate incorporating APB 4 Exercise	Dec 12		Mar 11	(21)	
	Weapon-Collins Combat System (AN/BYG-1 (V8)) Compatibility Certificate incorporating APB 4 Warshot	Jul 13	Jul 13		0	

Notes	
1	The above data represents rolled-up information as the project consists of many subsystems each of which has independent design review activities. As the critical path for these activities was defined by the submarine docking program, individual events within each of the above activities were allowed to move provided the delivery of the capability was not adversely impacted. Although some individual activities were ahead or behind schedule the project has maintained the critical path as defined by the submarine docking program. Additionally, the reported achieved dates are based on the signature of meeting minutes or reports by external organisations. As such, minor variance in the achievement dates can be attributed to the review and the subsequent approval process as recorded in meeting minutes and reports.
2	The Weapon-Collins Combat System (AN/BYG-1 (V8)) Compatibility Certificate, the RAN independent assessment of the suitability of the weapon for use on Collins Class submarines was not separately scheduled but was dependent on the issue of the US Torpedo Specification Compliance (issued 22 February 2008) and was a pre-requisite for granting Initial OR (7 May 2008). The Compatibility Certificate was issued on 1 May 2008.

3.2 Contractor Test and Evaluation Progress

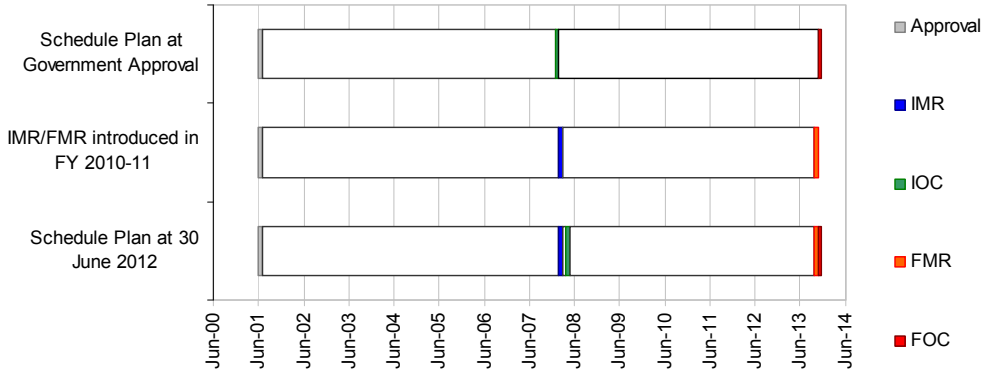
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Harbour Acceptance Tests	Weapon Handling and Discharge Systems Post MK 48 MOD 7 Heavyweight Modification Test HMAS WALLER (First of Class) (CAT 4 Testing]	Jan 07		Apr 07	3	1
Sea Acceptance Trials	Weapon Discharge System MK 48 MOD 6/7 Heavyweight Torpedo Modification for HMAS WALLER CAT 5 Testing	Oct 07		Dec 07	2	1

Notes	
1	Variance is attributable to the Navy Regulatory Review process and submarine program.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

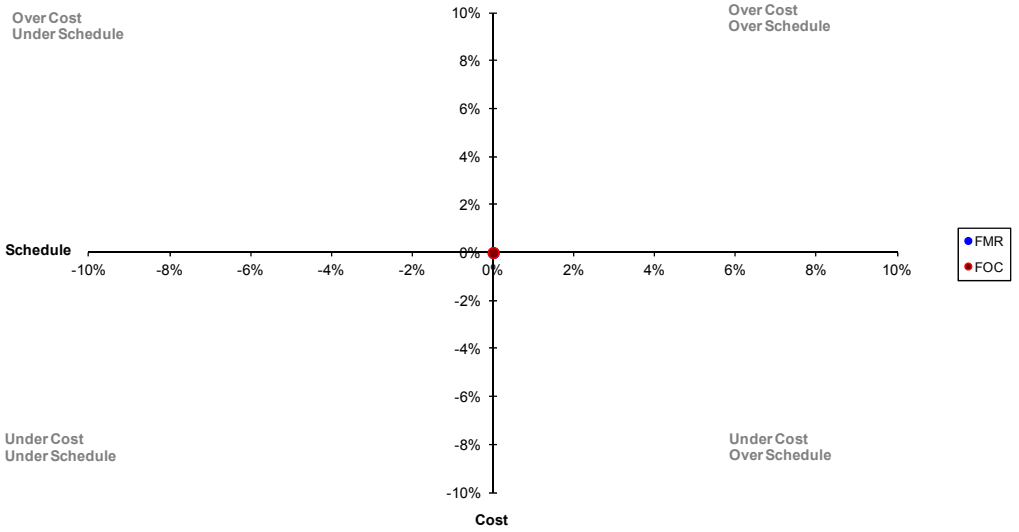
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Mar 08	**N/A**	
Initial Operational Capability (IOC)				
Platform Modifications and Spiral 1	Feb 08	May 08	3	Variance is attributable to the Navy Regulatory Review process.
APB 4	Nov 12	Mar 11	(20)	Dependent upon US Government acquisition process.
Final Materiel Release (FMR)	Nov 13	Nov 13	0	
Final Operational Capability (FOC)				
Platform Modifications and Spiral 1	Jan 10	Mar 10	2	Variance is attributable to the Navy Regulatory Review process.
APB 4	Nov 13	Nov 13	0	Achievement of FOC is dependent on Navy. The capability delivered by the project is consistent with the MAA and FOC will be achieved when the Capability Manager confirms all other Fundamental Inputs to Capability (FIC) are complete.

Schedule Status at 30 June 2012



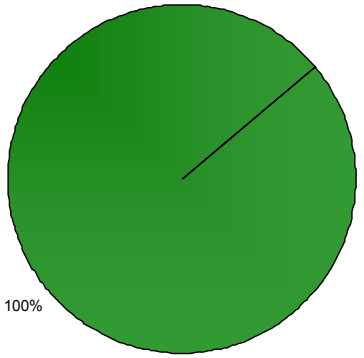
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	**Green:** Torpedo performance and training and simulation facilities requirements **are** currently being met.
	Amber: N/A
	Red: N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the project weapon testing program will be affected by limitations in production capacity at the Torpedo Maintenance Facility, leading to an impact on scheduled turn-around times for weapon preparation, and cost increases.	This risk is being treated by Engaging with Submarine Force (SUBFOR) and Navy Guided Weapons System Program Office (NGWSPO) to maximise weapon output to meet test schedule requirements.
There is a chance that the weapon software development and testing program will be affected by submarine operational demands and priorities, leading to an impact on schedule and cost increases.	This risk is being actioned by: • Engaging with stakeholders and SUBFOR to coordinate weapon testing and operational demands and priorities; and • Engaging with SUBFOR to maximise weapon testing in order to maintain schedule.
There is a chance that productivity of the project team will be affected by a turnover of key personnel, leading to an impact on cost and schedule.	This risk is being mitigated by: • Recruitment of appropriately skilled staff to fill vacant positions; • Training of staff to maintain requisite skills and knowledge; • Engaging with project stakeholders and Submarine Branch resources to mitigate loss of corporate knowledge; and • Engagement of contractors for specific tasks where expertise is not available in house.
There is a chance that Final Operational Release will be affected by non-compliance with the Certification Basis, leading to an impact on cost and schedule.	This risk is being mitigated by: • Working collaboratively with the USN to incorporate Australia's requirements in the TEMP and CDD; • Constant engagement at the Executive Steering Committee level to ensure the USN maintains a focus on meeting Australia's requirements; • Using USN performance measures, which exceed those in current use for Australian weapons, to meet IOR requirements; • Develop traffic light report to agree requirements baseline with stakeholders; • Maintaining a management reserve to cater for change and re-testing of failed requirements; and • The RAN conducting a number of the in-water runs.
There is a chance that transition to the sustainment organisations will be more complicated than planned, leading to an impact on supportability, schedule and cost.	**This risk has been reassessed by the Project and is now rated as a medium risk.**

Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
There is a risk that delays to the submarine docking program as a result of higher operational priorities or material defects will adversely affect the Project platform integration program creating schedule delays and cost increases.	**This risk is being mitigated by:** • **Active and frequent engagement with SUBFOR, PNR and ASC project management and commercial staff to ensure that any proposed changes to planned maintenance activities properly consider the potential impact on project schedule and/or cost.** • **Through DSMP and DGCA, the project team ensures that when considering changes to the Collins Integrated Master Schedule, committees such as the ASPO IPT, the Sustainment Control Board and the Program Review Board are properly informed about potential impact on project schedule and/or cost.**

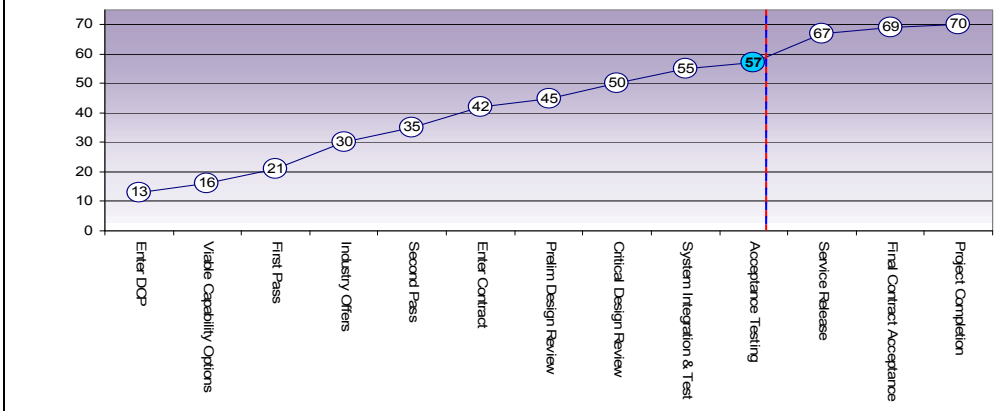
6.2 Major Project Issues

Description	Remedial Action
Uncertainty in the submarine docking cycle and the availability of submarines has impacted the heavyweight torpedo installation schedule.	Monitor Submarine Availability Group outcomes. The Project Office is not in a position to treat this issue, but is monitoring opportunities to install systems earlier.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	8	8	8	8	9	8	8	57
Acceptance Testing	Project Status	8	8	9	8	8	8	9	58
	Explanation	• **Requirement:** System integration and testing processes have verified the platform modification requirements and those modifications apply to later Spiral baselines. The APB 4 baseline has also been accepted for IOR. Therefore, the assessment score is marginally ahead of the benchmark score for this particular maturity **grade**. • **Technical Difficulty:** Spiral 1 software had been granted OR; APB 4 software is still under development and testing. Although there is high confidence that all technical issues will be solved it is appropriate to retain the maturity assessment against this attribute at the lower level at this time. • **Operations and Support:** APB 4 software has been granted Initial OR and has entered into operational testing. Therefore the maturity score is marginally ahead of the benchmark score for this particular maturity grade.							



2010-11 DMO MPR Status - - - -	2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Ensure that adequate staffing is available to execute the project particularly in the start up phase.	Resourcing
Ensure that all project dependencies are established before schedule is established.	Schedule Management
Identify all requirements for technical data and technology as early as possible in the project to allow the transfer requests to be administered. US Government International Traffic in Arms Regulation can require up to a year to progress.	Requirements Management
Engaging in a joint development project where Australia is the junior partner and largely dependent on the US Government program, can introduce project management, cost, technology and schedule risk that needs to be addressed.	First of Type Equipment

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	**Mr Andrew Cawley**
Division Head	AVM Chris Deeble
Branch Head	**Mr David Cochrane**
Project Director	CMDR Stephen O'Hearn **(to Jul 11)** **Mr David Connolly (Jul 11–current)**
Project Manager	Mr Walter Daly

Project Data Summary Sheet[254]

Project Name	**COLLINS CLASS SUBMARINE RELIABILITY AND SUSTAINABILITY**
Project Number	**SEA 1439 Phase 3**
Capability Type	Upgrade
Service	Royal Australian Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Sep 00
Total Approved Budget (Current)	$411.4m
2011-12 Budget	**$14.8m**
Project Stage	Critical Design Review
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

SEA 1439 Phase 3 is a program of upgrades to Collins Class platform systems and shore infrastructure to improve the Class reliability, sustainability, safety and capability.

1.2 Current Status

Cost Performance

As at 30 June 2012, project SEA 1439 Phase 3 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

The Through Life Support Agreement with ASC Pty Ltd (ASC), when combined with an annual contracting methodology, creates the main concern for the completion of the project within the existing budget. Recent financial years have realised improvements in the annual cost estimation process for programming of work and achieving financial performance outcomes. However, overall cost over the life of the project has suffered through previous inaccurate estimation of work content, and the inability to control implementation schedules. Improvement is expected in future, now that the majority of engineering design work has been completed **and the transition to the In-Service Support Contract (ISSC) with ASC which is a fixed price, performance based contract extending over multiple years.**

Schedule Performance

Current scheduled dates **are aligned with the Integrated Master Schedule (IMS) for the Submarine Program.** Installation of engineering enhancements on HMA Submarines SHEEAN and RANKIN **will be achieved; however they may** be subject to Full Cycle Docking (FCD) delays **outside of the projects control. Minor engineering enhancements have been installed on Submarines during smaller dockings and have had no impact on the docking completion date.**

[254] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

Materiel Capability Performance

Only two sub-projects provide new capabilities; Special Forces upgrade and the Torpedo Decoy. The remaining sub-projects are medium to low complexity engineering enhancements. The Special Forces upgrade provides three capabilities. Two have achieved Operational Release (OR), while the remaining capability (Exit & Re-entry) has been delayed due to the requirement to implement safety modifications identified during the manned Sea Verification Trial. These modifications **were** planned to be implemented in HMA Submarine DECHAINEUX during its next docking in the first half of 2012**, however the installation was identified as a risk to the docking completion date and therefore removed from the activity. This has resulted in a two year delay as the next available opportunity to install the required modifications will not be until 2014 during HMA Submarine DECHAINEUX Mid-Cycle Docking.** Torpedo Decoy Operational Test and Evaluation (OT&E) has slipped due to delays in achieving Initial Operational Release (IOR) for reasons outside of Project's control (revisions in Navy Regulations). The project has attained a regulator endorsed Certification Plan and Safety Case Report and is working closely with Directorate of Navy Certification to achieve IOR by **June 2012. Project has achieved Parts 1 and 2 approval of the Technical Instruction 338 and is awaiting Initial Integrated Logistic Support acceptance.**

Five engineering enhancements have been completed by the project. The remaining enhancements will be implemented progressively until 2022 subject to the submarine availability and the FCD program.

1.3 Project Context

Project	Explanation
Background	In 1999, Government sponsored the '*McIntosh and Prescott Report*' into submarine capability, which was followed by a subsequent review by Head Submarine Capability Team (HSMCT) who identified capability, reliability and sustainability issues with the Collins Class platform and associated shore infrastructure. In 2000, Government approved project funds to design and implement engineering enhancements for as many of these capability and materiel deficiencies as possible within the allocated budget. Government also approved a "global budget" whereby Head Maritime Systems could approve transfer of funding between SEA 1439 Phase 3, SEA 1439 Phase 4B (Improvements to Collins Sensors), SEA 1439 Phase 4A (Replacement Combat Systems) and SEA 1429 (Replacement Heavyweight Torpedo) to achieve optimum capability. Under the global budget there have been reductions in funding allocations to SEA 1439 Phase 3 in favour of SEA 1439 Phase 4A and SEA 1429, with a commensurate reduction in the number of engineering enhancements to be implemented through SEA 1439 Phase 3. The scope of this project is limited to the reliability and sustainability issues identified in the1999 review and not the more contemporary reliability and sustainability issues relating to diesel engines, generators, batteries or the main motor; those issues are being addressed under the submarine sustainment program. Many of the engineering enhancements can only be installed during the submarine FCD program and although most design and development activities are complete, submarine upgrades are contingent on the FCD program, which will run to 2022. A total of 24 platform upgrades **were originally identified in the initial Material Acquisition Agreement. However, two were removed due to one being technically infeasible and the other overlapping with another project. The remaining 22**, consisting of two new capabilities and **20** engineering enhancements, have been identified for action under the project. Five engineering enhancements have been completed and the two new capabilities are being implemented. However, completion of the remaining **15** engineering enhancements is priority driven and will be continually reassessed throughout the project. The two new capabilities and core engineering enhancements managed by the SEA 1439 Phase 3 project, which represent the highest priority and spend profile, and specifically disclosed in this report include: • **Special Forces Upgrade (New Capability):** To provide three basic levels of capability and to further enhance the capabilities to a fully deployable state in two submarines. • **Torpedo Counter Measures Internal Stores (Torpedo Decoy) (New Capability):** To provide a programmable counter measure against torpedos.

	• **Fire Fighting Upgrade (Engineering Enhancement):** Upgrade to the fire fighting systems onboard, including greater protection from fire and its toxic by-products. • **Sewage System Upgrade (Engineering Enhancement):** Automation of the sewage discharge system and thereby reduce the risks of exposure to toxic gases. • **Fast-Track mods to SM1, 2, 3 & 6 (Engineering Enhancement):** Address platform build deficiencies in a holistic get-well program. Details outlining the remaining 19 platform upgrades (engineering enhancements) were provided in ANAO Report No. 17 2010-11: 2009-10 Major Projects Report.
Uniqueness	Project SEA 1439 Phase 3 installs prioritised engineering enhancements and acquires replacement materiel as a part of ensuring continuous improvement of the boats. Engineering enhancements are undertaken by ASC under an annualised cost-plus Through Life Support Agreement (TLSA) contract, with the complex matrix of designs across the submarine fleet, scheduled for completion in 2022. Implementation of the ASC contract scope of work is linked to the boat FCD schedule and driven by availability requirements mandated by Chief of Navy and Program Manager Collins.
Major Challenges	Engineering enhancements are managed on a prioritised basis within the limited funding available, with implementation aligned to the IMS which is not controlled by the project. Where schedule slippage occurs, there is the potential for impact on project cost performance. A further challenge is to obtain capability sponsor acceptance of delivered supplies, given that the full range of engineering enhancements has not been supported with Capability Definition Documentation that enables ready acceptance of the delivered supplies. Project staff have developed Statements of Work (SOW) for contractor work. The SOWs have driven the development of System Requirement Specifications by contractors, thus allowing more conventional requirements management.
Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1439 Phase 4A **Replacement Combat System**	**To provide Collins Class submarines with the USN Tactical Command and Control System; minor improvements to the Combat System Augmentation; sonar and shore facilities for integration, testing and training.**	SEA 1439 Phase 3 have provided Global Positioning Systems (GPS) to SEA 1439 Ph 4A for installation with each Replacement Combat System (RCS) implementation.
SEA 1446 Phase 1 **Interim Minimum Operating Capability**	**Combat System Augmentation and a number of platform system modifications to two submarines and shore infrastructure.**	SEA 1446 Phase 1 supplied approved and verified fast track platform designs for implementation into four submarines.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Sep 00	Original Approved		72.0	
Apr 01	Real Variation – Transfers	3.7		1
Jul 01	Real Variation – Scope	302.8		2
Sep 02	Real Variation – Transfers	(42.0)		3
Aug 04	Real Variation – Budgetary Adjustments	(0.3)		4
Aug 05	Real Variation – Budgetary Adjustments	(0.5)		5
Oct 06	Real Variation – Scope	7.5		6
			271.2	
Jul 10	Price Indexation		74.4	7
Jun 12	Exchange Variation		(6.2)	
Jun 12	**Total Budget**		411.4	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – ASC PTY Ltd	**(202.7)**		
	Other Contract Payments / Internal Expenses	**(110.3)**		8
			(313.0)	
FY to Jun 12	Contract Expenditure – ASC PTY Ltd	**(13.7)**		
	Other Contract Payments / Internal Expenses	**(0.2)**		9
			(13.9)	
Jun 12	**Total Expenditure**		**(326.9)**	
Jun 12	**Remaining Budget**		**84.5**	

Notes	
1	Transfer from SEA 1439 Phase 1B.
2	Implementation of a reliable and sustainable Platform (full scope).
3	Transfer to SEA 1439 Phase 4A as part of initial approval.
4	Administrative Savings harvest.
5	Skilling of Australia's Defence Industry harvest.
6	RCI of $7.5m for Special Forces modification to an additional Collins Class submarine.
7	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $66.7m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $7.7m having been applied to the remaining life of the project.
8	Other expenditure comprises $54m against multiple minor contracts with Defence companies (including Australian companies). These companies provide goods and services to support the various activities being undertaken by this project. Specific examples of significant expenditure include $14m with Thales for the Underwater Telephone and the Towed Array Handling System. It includes $12m to L3 Nautronix Ltd for the underwater communications system (HAIL) and sonobuoy (Pasor). $5m was also paid to Societe Technique Energy Atomique for the Propulsion Control Reference System (PCRS). Remaining expenditure relates to general operating expenditure including contractor and consultancy services associated with the delivery of this project.

9	Other expenditure comprises: operating expenditure, contractors, consultants, contingency, and other capital expenditure not attributable to ASC under the TLSA.

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**Local Industry variance factor is due to the forecast invoice for cost incurred in June not being received from ASC before the end of financial year.**
			Overseas Industry	
		(0.9)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
14.8	**13.9**	**(0.9)**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
ASC Pty Ltd	Dec 03	N/A	N/A	Variable (Cost Plus)	Strategic Agreement	1

Notes	
1	All work carried out by ASC is managed under the TLSA contract and is programmed on a year by year basis (the TLSA provides a framework under which all submarine sustainment and project activities are managed) and the SEA 1439 Phase 3 project provides funding to support the scope of work for each of the **22** platform upgrades (two new capabilities and **20** engineering enhancements), consequently, there is no individual contract established with ASC for the **22** platform upgrades.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
ASC Pty Ltd	N/A	N/A	See 1.2 Background for further information.	

Major equipment received and quantities to 30 Jun 12
A total of **22** platform upgrades (consisting of two new capabilities and **20** engineering enhancements) continue to be progressed for each of the six submarines - subject to the FCD Program.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Final Design Review	Special Forces	N/A		Dec 04	N/A	2
	Torpedo Decoy	Jun 10		Jul 10	1	1
	Fire Fighting Upgrade	N/A		Jun 04	N/A	2
	Sewage System Upgrade	N/A		Nov 04	N/A	2
	Fast Track Enhancements	N/A		N/A	N/A	1
First of Class Implementation	Special Forces (COLLINS)	Jun 05		Oct 07	28	3
	Torpedo Decoy (DECHAINEUX)	Jun 10		Jun 10	0	
	Fire Fighting Upgrade (RANKIN)	Jul 06		Oct 07	15	1
	Sewage System Upgrade	Jul 06		Jul 08	24	1

	(WALLER)					
	Fast Track Enhancements (RANKIN)	May 01		Jun 06	61	1
Full Class Implementation	Special Forces (COLLINS)	May 08		Feb 10	21	1, 3, 4
	Torpedo Decoy (RANKIN)	Oct 13		Oct 13	0	1
	Fire Fighting Upgrade (SHEEAN)	Sep 22		Sep 22	0	1
	Sewage System Upgrade (FARNCOMB)	Mar 17		Mar 17	0	1
	Fast Track Enhancements (WALLER)	Jul 06		Nov 07	16	1

Notes	
1	The above data represents rolled-up information within the listed sub-projects each of which has many independent design review activities associated with over 100 Configuration Change Proposals (CCP). As the critical path for these sub projects was broadly defined by the submarine docking program, individual activities within each of the above sub projects were allowed to move provided the delivery of the capability was not impacted adversely by delaying the completion of the specific docking. Although some individual activities were ahead or behind schedule the project has maintained the critical path as defined by the submarine docking program.
2	In some instances, the original planned schedule for sub projects was incorporated into the submarine maintenance schedule which was maintained by ASC. ASC update the maintenance schedule annually and do not retain original schedule information. Consequently, apart from post June 2005 activities (supported by a Materiel Acquisition Agreement), it is not possible to provide the original planned dates for some platform upgrade projects, which were scheduled to occur during an unstable FCD Program. Fast Track was initially installed on two submarines and managed under SEA 1446 Phase 1. SEA 1439 Phase 3 is responsible for rolling out those changes to the remaining four submarines. As such, all design and associated design review and approval was achieved under SEA 1446 Phase 1 Collins Class Interim Minimum Operating Capability (IMOC).
3	HMA Submarine COLLINS received modifications for Multi Swimmer Release and Float on/Float off which comprise two of the three Special Forces capabilities. The third (Exit & Re-entry) required redesign to increase diver safety following sea trials conducted in HMA Submarine COLLINS in 2008. The first opportunity to install these safety enhancements will be in HMA Submarine DECHAINEUX to be completed by September **2014** which will enable IOR to be achieved. Installation in HMA Submarine COLLINS will **commence** during its FCD in **August** 2012.
4	Full class implementation will not be achieved until HMA Submarine COLLINS has completed its FCD in 2015 in accordance with the IMS.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Harbour Acceptance Test (HAT)	Special Forces (COLLINS)	Jun 05		Sep 06	15	1
	Torpedo Decoy (DECHAINEUX)	Jun 10		Jun 10	0	
	Fire Fighting Upgrade (RANKIN)	Oct 13		Oct 13	0	
	Sewage System Upgrade (WALLER)	Jul 06		Mar 07	8	1
	Fast Track Enhancements	N/A		N/A	N/A	
Sea Acceptance Test (SAT)	Special Forces (COLLINS)	Aug 05		Dec 07	28	1, 2

	Torpedo Decoy (DECHAINEUX)	Jul 10		Jul 10	0	
	Fire Fighting Upgrade	N/A		N/A	N/A	
	Sewage System Upgrade (WALLER)	Aug 06		Oct 07	14	1
	Fast Track Enhancements	N/A		N/A	N/A	

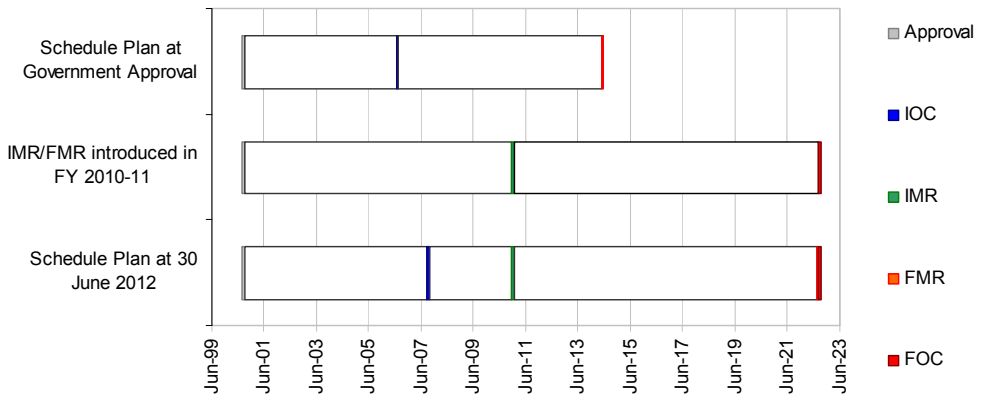
Notes	
1	The original planned schedule for all sub projects was incorporated into the submarine maintenance schedule which is maintained by ASC. ASC update the maintenance schedule annually and do not retain original schedule information. Additionally, test and evaluation is linked to the post docking test and trials, therefore, the true variance will reflect the variance in **Section** 3.1. Fast Track was initially installed on two submarines and managed under SEA 1446 Phase 1. SEA 1439 Phase 3 is responsible for rolling out those changes to the remaining four submarines. As such, HAT and SAT was achieved under SEA 1446 Phase 1.
2	HMA Submarine COLLINS received modifications for Multi Swimmer Release and Float on/Float off which comprise two of the three Special Forces capabilities. The third (Exit & Re-entry) required redesign to increase diver safety following sea trials conducted in HMA Submarine COLLINS in 2008. The first opportunity to install these safety enhancements will be in HMA Submarine DECHAINEUX to be completed by September **2014** which will enable IOR to be achieved. Installation in HMA Submarine COLLINS will **commence** during its FCD in **August** 2012.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Jan 11	N/A	
Initial Operational Capability (IOC)				
Initial Operational Release Special Forces (DECHAINEUX)	Nov 10	**Sep 14**	**46**	Refer Section 1.2 Current Status: **Materiel** Capability Performance.
Initial Operational Release Torpedo Decoy (DECHAINEUX)	Aug 10	**Jun 12**	**22**	Refer Section 1.2 Current Status: **Materiel** Performance.
Fire Fighting Upgrade (RANKIN)	Oct 13	Oct 13	0	IOC is linked to successful completion of the Harbour Verification Testing (HVT), where any variance will be caused through movement in the docking maintenance schedule. These dates are based on the IMS of April 2010.
Sewage System Upgrade (WALLER)	Aug 06	Oct 07	14	IOC is linked to completion of the FOC Sea Acceptance Testing (SAT). Variance due to changes in docking maintenance schedule since original Materiel Acquisition Agreement (MAA).
Fast Track	N/A	N/A	N/A	Fast Track initially installed on two submarines and managed under SEA 1446 Phase 1. SEA 1439 Phase 3 is responsible to roll out to remaining four submarines. IOC was the responsibility of SEA 1446 Phase 1.
Final Materiel Release (FMR)	Oct 22	Oct 22	0	

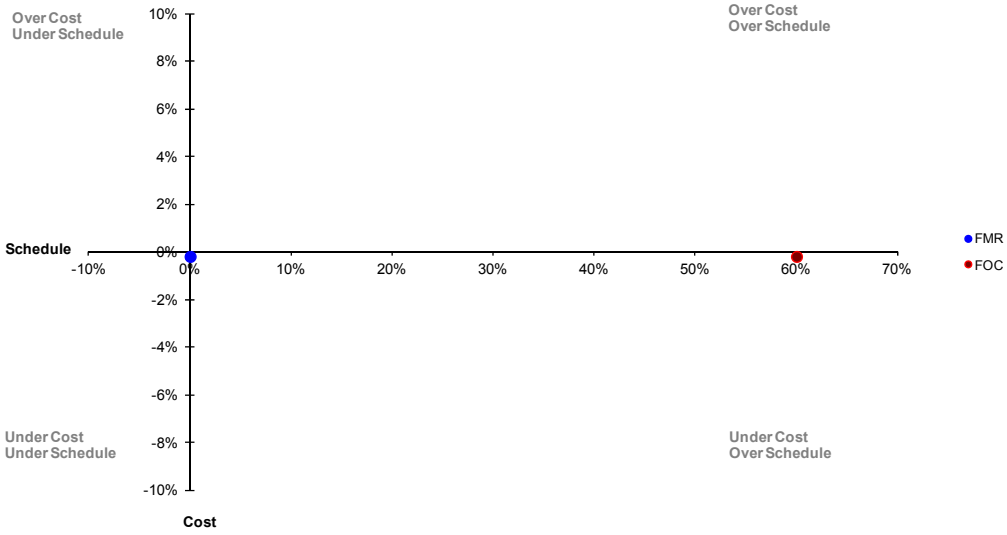
Final Operational Capability (FOC)				
Operational Release of Special Forces	Jun 07	Dec 15	102	The MAA delivery date was for HMAS COLLINS only. HMAS DECHAINEUX implementation through MAA amendment created variance. The delay was further influenced by contractor workforce constraints and the phased delivery of capability enhancements to the Special Forces systems.
Operational Release of Torpedo Decoy	Jun 14	Oct 13	(8)	This modification is largely independent on the constraints of the docking maintenance schedules and can be simultaneously rolled out to platforms.
Fire Fighting Upgrade (SHEEAN)	Jun 14	Sep 22	99	Variance due to changes in docking maintenance schedule since original MAA.
Sewage System Upgrade (FARNCOMB)	Jun 14	Mar 17	33	Variance due to changes in docking maintenance schedule since original MAA.
Fast Track (WALLER)	Jul 06	Nov 07	16	Fast Track initially installed on two submarines and managed under SEA 1446 Phase 1. This project installed the Fast Track upgrades across the remaining four submarines. Variance due to changes in docking maintenance schedule since original MAA.

Schedule Status at 30 June 2012



Section 4 – Project Cost and Schedule Status

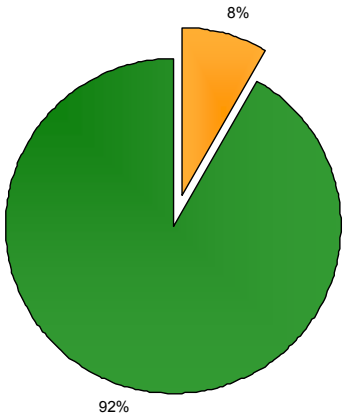
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Green:

Upgrades to platform and shore infrastructure are meeting operational, functional and safety requirements.

Upgrades are rectifying capability deficiencies with the initial system.

Appropriate & timely training provided to operators and maintainers is occurring.

Submarines meet the requirements of the Navy Technical Regulations.

System upgrades meet supportability requirements as defined under individual system upgrade certification plans.

Amber:

The Special Forces Exit and Re-entry safety modification to one vessel has been delayed to reduce the impact on the maintenance schedule. This modification will be installed during the next maintenance availability.

Red:

N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that slippages to the boat FCD schedule will impact the installation of engineering enhancements and new capability, leading to cost and schedule increases to the project.	This risk is being treated by: • Obtaining endorsement of the IMS at the senior management level; • Improving management of maintenance schedules; and • Ensuring configuration changes are captured in the targeted maintenance availabilities Total Work Package.
There is a chance that competing workload demands will reduce the skilled resources available at the contractor facility and impact the installation and testing of engineering enhancements on boats, leading to cost and schedule increases.	This risk is being treated by: • Undertaking engineering enhancement in accordance with the IMS; • Resolving design issues with engineering enhancements early to improve design maturity; and • Coordinating the engineering enhancement workload on the ASC capped workforce.
There is a chance that a lack of submarine sea time will impact the completion and evaluation of sea trials of prototype engineering enhancements, leading to schedule delays and cost increases to the final design.	This risk is being treated by: • Using the IMS to establish long-term planning of sea trials to improve the coordination of submarine availability; • Engaging with stakeholders to communicate, in advance, test schedules and boat availability needs; and • Monitoring the status of submarine availability and impact on sea acceptance testing and trials. **Note: Project assesses this risk as medium due to the maturing of the IMS which enables long term planning.**
Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
N/A	N/A

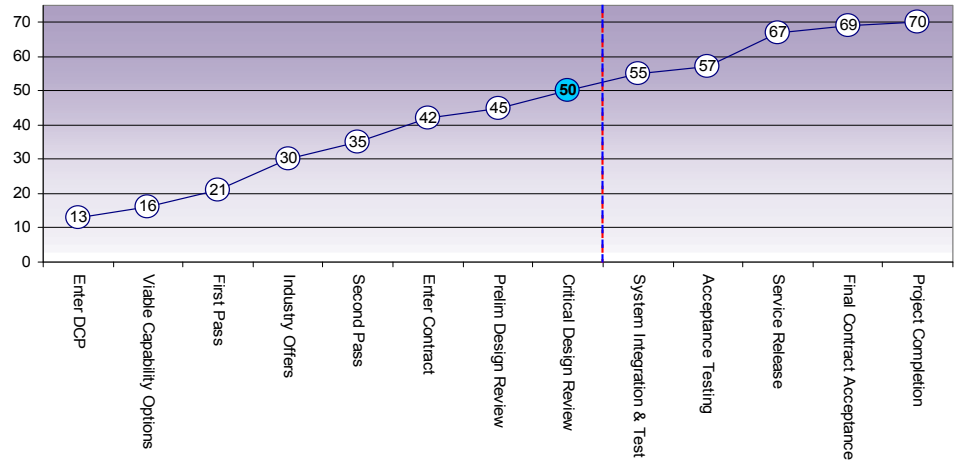
6.2 Major Project Issues

Description	Remedial Action
Uncertainty in the submarine docking cycle (a result of unscheduled maintenance arisings) and the delayed availability of submarines has impacted the schedule for installing engineering enhancements and new capability on the boats.	The Project Office is not in a position to treat this issue, but is monitoring priorities and opportunities to install engineering enhancements earlier, when practicable. **Stakeholder engagement and endorsed prioritisation of remaining elements will enable programming of each element into future availabilities.** **Note: Project assesses this issue as Medium due to the maturing of the IMS which enables long term planning.**
That Torpedo Decoy (SUBSCUT) Capability will not be accepted prior to life expiry of Acoustic Decoy Countermeasures (ADC).	ADC life has expired. SUBSCUT is yet to achieve interim operational **release** status **however is available for training and carriage as required. Project has achieved Parts 1 and 2 approval of the Technical Instruction 338 and is awaiting Initial Integrated Logistic Support acceptance to progress Parts 3.**

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	7	7	7	8	7	7	7	50
Critical Design Review	Project Status	6	6	8	8	8	8	9	53
	Explanation	• **Schedule:** Establishment of the IMS and maturity of the majority of designs gives confidence in the schedule. • **Cost:** Project estimates for individual enhancements were not feasible given the TLSA and undefined project scope. Removal of selected capability or engineering enhancements is required in order to deliver other enhancements within the remaining budget. • **Requirement:** Designs are either complete or well advanced for most platform upgrades projects. Many are partially implemented across the class. • **Technical Difficulty**: Some verification of designs have been completed, however some technical design challenges remain in progress; such as, composite external pressure vessels for Special Forces. • **Commercial:** Transition to an ISSC from TLSA is providing Project with confidence that the remaining project cost will be reduced or stabilised as the ISSC is a fixed price contract which will facilitate better control of cost. • **Operations and Support:** Project has achieved IMR for a number of sub-project enhancements and is now primarily in the implementation phase.							



2010-11 DMO MPR Status - - - - 2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Ensure that all capability requirements are clearly defined, approved and appropriately funded before detailed acquisition planning commences.	Requirements Management
Ensure that maintenance period schedule dependencies are identified and appropriate risk management strategies developed.	Schedule Management
Consider the impact associated with long term sole source cost plus contracts.	Contract Management

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	**Mr Andrew Cawley**
Division Head	AVM Chris Deeble
Branch Head	**Mr David Cochrane**
Project Director	**Mr David Connolly**
Project Manager	**CMDR Stephen O'Hearn (to Oct 11)** **Mr Brad Hajek (Sep 11–current)**

Project Data Summary Sheet[255]

Project Name	**SM-1 MISSILE REPLACEMENT**
Project Number	**SEA 1390 Phase 4B**
Capability Type	Replacement
Service	Royal Australian Navy
Government 1st Pass Approval	Nov 03
Government 2nd Pass Approval	Jul 04
Total Approved Budget (Current)	**$398.8m**
2011-12 Budget	**$19.1m**
Project Stage	Acceptance Testing
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

This project will replace the Standard Missile-1 (SM-1) missile with a modern variant of the Standard Missile-2 (SM-2) missile and improve the air defence capability of the Guided Missile Frigate (FFG) fleet, adding to the capability delivered by the FFG Upgrade project.

1.2 Current Status

Cost Performance

As at 30 June 2012, project SEA 1390 Phase 4B has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Significant savings **have been achieved and** incorporated in a real cost decrease, **submitted in the 2012-13 Portfolio Budget Statements** and Materiel Acquisition Agreement update **in March 2012**.

[255] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

Schedule Performance

Procurement and delivery of missiles completed February 2010. FFG SM-2 missile Stage 1 Home-All-the-Way (HAW) Material Release (May 2010), Initial Operational Release (IOR) (July 2010) and Initial Operational Capability (IOC) (August 2010) now achieved. Stage 2 (final stage) Mid Course Guidance (MCG) capability Material Release occurred with Stage 2 software installation aboard HMAS *Sydney* in May 2011. Subsequent combined Acceptance Test and Operational Test & Evaluation live-fire events for the SM-2 missile test program successfully conducted off Hawaii during June 2011.

Land based and shipboard regression testing during January – March 2012 identified some issues for remediation prior to the MCG final software baseline being finalised for release in 3rd quarter 2012. MCG roll-out is subject to the Navy Force Generation Plan and ship availability schedule, and installation in all FFGs is unlikely to be completed by end of 2012. Schedule impact to Final Material Release (FMR) **(Ship and shore based systems)**, and Final Operational Capability (FOC) **is uncertain but is likely to be achieved during 2013**.

Materiel Capability Performance

FFG SM-2 Stage 1 HAW capability baseline was established in May 2010 and has been installed in all four FFGs and the land based Team Trainer. An operational firing event aboard HMAS *Newcastle* was conducted successfully in July 2010, and on 25 August 2010 Chief of Navy (CN) approved IOR of the FFG SM-2 HAW capability. The IOC **was** also achieved coincident with HMAS *Melbourne* deployment in August 2010. **CN endorsed the SM-2 HAW capability, in conjunction with the upgraded FFG capability, for Operational Release (OR) on 28 June 2012.**

The FFG SM-2 stage 2 MCG capability software baseline was established in May 2011 and installed in HMAS *Sydney* in preparation for combined Acceptance Test and Operational Test & Evaluation live-fire events that were successfully conducted off Hawaii in June 2011. The SM-2 stage 2 final software baseline **release** and **fielding in the first FFG is expected to complete in the 4th quarter of** 2012.

1.3 Project Context

Project	Explanation
Background	Project SEA 1390 Phase 4B, as a discrete phase of the SEA 1390 Ph2 FFG Upgrade project, will integrate the SM-2 Block IIIA surface to air missile into the four Royal Australian Navy (RAN) ADELAIDE class frigates (FFGs) at the "Mid-Course Guidance" standard, and acquire Initial Ship Outfit and Inventory Stock missiles. The SM-2 Block IIIA missile is the replacement Area Air Defence (AAD) weapon for the aging SM-1 missile in RAN service with the FFGs. It will provide a modern area air defence missile capability to the RAN FFGs and affording an air defence to escorted vessels and coastal infrastructure or forces deployed nearby. The SM-2 capability will be progressively delivered in two stages to mitigate technical risk with the development and fielding of the required software. Stage 1 provides an SM-2 HAW capability (which was achieved in August 2010 with the deployment of HMAS *Melbourne* to Operation Slipper) with the full capability of MCG to be delivered in Stage 2. The Commonwealth, through the FFG Systems Program Office (SPO), has assumed responsibility as the Prime Systems Integrator (Prime Contractor). This commercial arrangement is important as it provides a sound risk mitigation approach to the project's primary risk – the completion of the production stages of the SEA 1390 Ph2 FFG Upgrade project (particularly the implications of non-availability of the FFG). This level of managerial oversight has allowed the FFG Upgrade project (SEA 1390 Ph 2) and the SM-2 Integration (SEA 1390 Ph 4B) to occur in parallel without negatively impacting each upon the other.
Uniqueness	Acquisition of the SM-2 capability is being undertaken via a combination of United States (US) Government Foreign Military Sales (FMS) arrangements and US and Australian commercial sources, with overall 'Prime Systems Integrator' responsibility resting with the FFG SPO. There is a strong reliance on Original Equipment Manufacturers (OEM) due either to necessity (sole supplier/ proprietary information/ intellectual property constraints) or to mitigate risk and to maintain technical integrity. In addition, under a Service Level Agreement, Navy Guided Weapons Systems Program Office (NGW SPO) is responsible for the acquisition of the SM-2 missiles, missile support and repair/certification facilities at the Intermediate Level Maintenance Facility (ILMF) Defence Establishment Orchard Hills.

Major Challenges	Ship availability within the RAN Force Generation Plan (FGP) remains a significant challenge and scheduling for installation and test activities is difficult. **SM-2 Stage 2 MCG final software baseline will be ready for roll-out in the 3rd quarter 2012 but ship availability will delay this activity to at least 4th quarter 2012, and FMR (originally scheduled 3rd quarter 2012) to 2013.**
Other Current Projects/Sub-Projects	**SEA 1390 PH 2.1 – Guided Missile Frigate Upgrade Implementation:** Upgrade FFG Anti-Ship Missile defence, air search radar and missile fire control system/radars, Underwater Warfare, Electronic Support and other ship systems, Data Link, ship and shore based Training Systems and establish a Warfare Systems Support Centre. **SEA 1390 PH 4A – FFG SM-1 Missile Replacement Test Station:** Purchase of the Mk698 Test Set for logistic support and all up round depot level maintenance of the SM-2.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1390 PH 2.1 FFG Guided Missile Frigate Upgrade Implementation	Upgrade FFG Anti-Ship Missile defence, air search radar and missile fire control system/radars, Underwater Warfare, Electronic Support and other ship systems, Data Link, ship and shore based Training Systems and establish a Warfare Systems Support Centre.	The upgraded FFG combat system developed under SEA 1390 Phase 2.1 was a necessary precursor and baseline for the development of the SM-2 capability. The upgraded FFG combat system was developed and delivered progressively as three successive (software) baseline builds and the completion of Baseline Build 2 was necessary for the further development of the SM-2 capability to be completed under SEA 1390 Phase 4B.
SEA 1390 PH 4A FFG SM-1 Missile Replacement Test Station	Purchase of the Mk698 Test Set for logistic support and all up round depot level maintenance of the SM-2.	Project SEA 1390 Phase 4A is another discrete phase of the SEA 1390 FFG Upgrade Project and is directly linked to the SM-2 capability. This phase acquired, installed and set-to-work a Mk 698 Mod 0 Guided Missile Test Set necessary to support the re-certification, maintenance and repair of the SM-2 Block IIIA missiles.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Jul 04	Original Approved		552.6	
Aug 05	Real Variation – Budgetary Adjustments	(2.1)		1
Apr 12	Real Variation – **Transfer**	**(86.5)**		2
Apr 12	**Real Variation – Cost Saving**	**(120.0)**		**2**
			(208.6)	
Jul 10	Price Indexation		127.9	3
Jun 12	Exchange Variation		**(73.1)**	
Jun 12	**Total Budget**		**398.8**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – AAI Corporation	**(12.4)**		
	Contract Expenditure – Lockheed Martin	**(24.1)**		
	Contract Expenditure – BAE Systems	**(14.6)**		
	Contract Expenditure – US Government	**(232.1)**		
	Other Contract Payments / Internal Expenses	**(11.5)**		4
			(294.7)	
FY to Jun 12	Contract Expenditure – AAI Corporation	**(0.8)**		
	Contract Expenditure – Lockheed Martin	**(1.3)**		
	Contract Expenditure – BAE Systems	**(0.2)**		
	Contract Expenditure – US Government	**(6.5)**		
	Other Contract Payments / Internal Expenses	**(3.3)**		**5**
			(12.1)	
Jun 12	**Total Expenditure**		**(306.8)**	
Jun 12	**Remaining Budget**		**92.0**	

Notes	
1	Skilling Australia's Defence Industry harvest.
2	**Real Cost Decrease comprising $86.5m funds transfer to SEA 4000 Ph 3.2 Standard Missile - 2 Conversion and Upgrade approved by CDF and Secretary, Department of Defence 29 August 2011, and $120m cost savings identified at the 2012-13 Portfolio Budget Estimates Review for return to the Defence Capability Program.**
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $118.7m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $9.2m having been applied to the remaining life of the project.
4	Other expenditure comprises operating expenditure, contractors, external service providers, consultants, other capital expenditure not attributable to the aforementioned top four contracts and minor contract expenditure.
5	**Other expenditure comprises $1.8m software development/enhancement by the combat system software (ADACS) OEM, Thales Australia (not reported in the top four Project Major Contracts listed at Section 2.3 below), $1.1m for Australian and USA commercial technical support (verification/validation) services, and $0.3m for other Project management support costs – travel/minor operating expenses.**

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		(4.5)	FMS	**The variation of ($7.0m) to the FY 2011-12 estimate was primarily due to US Foreign Military Sales (FMS) billings being behind the programmed FMS payment schedule. Some Australian and overseas industry software development related delays, and other additional (Commonwealth planned) activities for which provision was available but not undertaken also contribute to the under-spend.**
		(0.6)	Overseas Industry	
		(0.5)	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(1.4)	Commonwealth Delays	
19.1	**12.1**	**(7.0)**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
AAI Corporation	20 Jul 07	10.4	**15.6**	Firm	ASDEFCON	
Lockheed Martin	20 Jul 07	23.9	25.7	Firm	ASDEFCON	
BAE Systems	4 Feb 08	7.8	8.3	Firm	ASDEFCON	
US Government	15 Aug 05	218.9	**261.8**	FMS	FMS	

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
AAI Corporation	Various	Various	Upgraded On-board Training System (OBTS), ship Guided Missile Launcher System (GMLS) and Land Based Simulation System (LBSS).	
Lockheed Martin	Various	Various	MK92 Continuous Wave Illuminated upgrade.	
BAE Systems	Various	Various	Guided Missile Launcher System upgrade.	
US Government	Various	Various	Acquisition of SM-2 Missiles, Weapon Control System software upgrade.	

Major equipment received and quantities to 30 Jun 12
Delivery of approved suite of missiles achieved. Hardware installations complete.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	GMLS Mk-13	Oct 05	N/A	Oct 05	0	
	OBTS/LBSS	Dec 05	N/A	Dec 05	0	
	Mk-92 Fire Control System Solid State CWI	Oct 05	N/A	Oct 06	12	1
	Command & Control (C2) ADACS Software	Feb 09	N/A	Feb 09	0	
	Weapons Control System	Oct 07	N/A	Oct 07	0	

Preliminary Design	GMLS Mk-13	N/A	N/A	N/A	0	
	OBTS/LBSS	Sep 07	N/A	Sep 07	0	
	Mk-92 Fire Control System Solid State CWI	Oct 07	N/A	Sep 07	(1)	
	C2 ADACS Software	Jun 10	N/A	Feb 10	(4)	
	Weapons Control System – Stage 1: HAW	Mar 08	N/A	Apr 08	1	2
	Weapons Control System – Stage 2: MCG	Jan 09	N/A	Feb 09	1	2
Critical Design	GMLS Mk-13	Oct 07	N/A	Nov 06	(11)	
	OBTS/LBSS	Jan 08	N/A	Jan 08	0	
	Mk-92 Fire Control System Solid State CWI	Jan 08	N/A	Jan 08	0	
	C2 ADACS Software	Jun 10	N/A	Feb 10	(4)	
	Weapons Control System – Stage 1: HAW	Aug 08	N/A	Aug 08	0	
	Weapons Control System – Stage 2: MCG	Jul 09	N/A	Jul 09	0	

Notes	
1	Delay due to mutually agreeing considerations with respect to Limitation of Liability and Intellectual Property.
2	Delay attributable to consolidation of travel to US for multiple events including this review.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration - Weapons Control System Stage 1 HAW	Standard Missile Adjunct Processor (SMAP) Integration	Feb – Mar 09	N/A	Feb – Mar 09	0	
	Weapons Control Processor (WCP)//SMAP Integration Surface Warfare Engineering Facility	Mar – Jun 09	N/A	Mar – Jun 09	0	
	HAW CWI Engineering Development Model	Jun 09	N/A	Jun 09	0	
	System Integration Test – Shipboard	Aug – Sep 09	N/A	Sep – Oct 09	1	1
	System Acceptance Test – Shipboard	Oct – Nov 09	N/A	Nov 09	0	
System Integration - Weapons Control System Stage 2 (Mid-Course Guidance)	WCP/SMAP Integration Surface Warfare Engineering Facility.	Jul – Nov 10	N/A	Nov 10	0	
	ADACS/WCP/SMAP Integration – Garden Island, Sydney	Jul – Sep 10	N/A	Oct 10	1	2
	System Integration Test – Shipboard	Dec 10 – Jan 11	N/A	Jan 11	0	
	System Acceptance Test – Shipboard	Jan – Mar 11	N/A	Mar 11	0	
Acceptance	WSN-7B Ring Laser Gyro-compass	N/A	N/A	Sep 07 – Aug 09	0	3
	SM-2 Missiles	Sep 07 – Dec 08	N/A	Jul 08 – Oct 09	10	4
	GMLS Mk-13 Installation (4 ships)	Feb 09 – Feb 10	N/A	Apr 09 – Jun 10	4	5,6,7

	GMLS Mk-13 Roundhouse 1 Installation	Jan 09	N/A	Apr 09	2	8
	OBTS	Mar 09	N/A	Jun 10	9	9
	Team Trainer (TT)	Jul 09	N/A	Dec 09	5	10
	WSSC	Jul 09	Oct 09	Sep 09	2	
	Mk-92 Fire Control System Solid State CWI (4 Ships).	Nov 08 – Jul 09	N/A	Aug 08 – Apr 10	9	11
	Mk-92 Fire Control System Solid State CWI for Ship Set 5.	Nov 09 – Mar 10	N/A	Oct 09 – Jun 10	3	11
	Mk-92 Fire Control System Solid State CWI for Moorestown NJ, USA.	Dec 09 – Jul 10	N/A	Jan 10 – Apr 11	9	12
	Mk-92 Fire Control System Solid State CWI for Garden Island, Sydney.	Aug 10 – Sep 10	N/A	Apr 10 – Jun 11	9	12
	C2 ADACS Software	Feb 12	N/A	**Sep 12**	**7**	**16**
	Weapons Control System Stage 1	Dec 09	N/A	Aug 10	8	13
	Weapons Control System Stage 2 Firing Event Capability Demonstration	Mar – Apr 11	Jun 11	Jun 11	3	14
	Weapons Control System Stage 2 Operational Capability	N/A	Oct – Dec 12	Oct – Dec 12	0	15

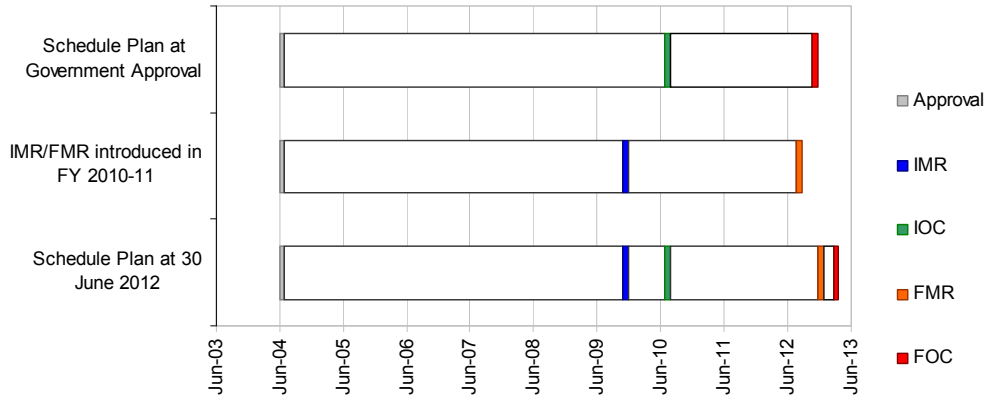
Notes	
1	A slight delay of nine days to coincide with ship completion of scheduled maintenance availability, thereby allowing the commencement of system testing.
2	Delay attributable to ADACS software development and related follow-on certification for the FFGs to operate on the Australian tactical Multi-TDL Network (MTN).
3	Delivery schedule for listed items procured under FMS Case AT-P-GMG not specified. Original planned date for delivery is not applicable.
4	Delay attributable to requisition of missile components by US Navy during (FMS Case ATP-LCY) production phase.
5	Ship 1 Installation was completed as scheduled in January 2009, however, Milestone achievement was delayed for resolution of minor design issues. This delay had no effect on the overall project delivery schedule.
6	Ship two installation completed, milestone awaiting resolution of N260469 CCP-5 (in progress). This delay had no effect on the overall project delivery schedule.
7	Ship four Installation was completed as scheduled in December 2009. However the Test Results and Supplies Acceptance Certificate was provided and accepted by the Commonwealth in January 2010. This delay had no effect on the overall project delivery schedule.
8	Installation completed as scheduled in January 2009. However, the Test Results and Supplies Acceptance Certificate was provided and accepted by the Commonwealth in April 09 after installations and minor design corrections were made. This delay had no effect on the overall project delivery schedule.
9	Initial Acceptance Testing onboard HMAS MELBOURNE showed defect in Government furnished Equipment (GFE) inertial navigation system Finalisation of the OBTS Acceptance was withheld pending correction of this defect.
10	The test and acceptance of the Land Based Simulation System software was dependant on the availability of the site for this purpose within the overall RAN training schedule. Since the Team Trainer (TT) was not available at the contracted time, the obligation was deferred until the TT was available and was coordinated with other visits to Australia by the US vendor (AAI Corporation) personnel. This delay had no effect on the overall project delivery schedule.

11	MK92 CWI updates included the classified Stable Master Oscillator (STAMO). The alterations required a turn-around program for the classified items through the OEM (Lockheed Martin MS2) in USA and its supplier. There is a limited number of classified shipments through the Australian Freight Forwarder in USA and RAAF Richmond in Australia. Additionally these classified items require licencing by the US Department of State for international transfer. Several issues were encountered where the Australian Freight Forwarder changed its street address in USA and this required re-issuing of the licence, a process that takes about three months through the US Department of State. Coordination of ship availability for installation testing of modified STAMOs and to provide the GFE for the turn-around program needed to be undertaken with the classified shipments. The purpose was to ensure that the ships were always operational during the turn-around program with some variation to the contracted milestones, which was appreciated by both parties. The delay had no effect on the overall project delivery schedule.
12	A latent defect in the original FFGUP STAMO design was discovered midway through the SM2 alteration turn-around program. This meant that additional design and fabrication was required and that all STAMOs needed to be turned around again. The re-work was agreed under contract change and the existing contract milestones rescheduled. The redesign, fabrication, and proof of correction took longer than expected due to material supply lead-time and issues associated with the shipment of classified items to/from USA (see Note 13). Additionally STAMOs in the turn-around program not being available for ships (see Note 13) which perturbed the overall program since a modified STAMO was necessary before an unmodified STAMO could be returned. The delay had no effect on the overall project delivery schedule.
13	Shipboard testing identified issues which required resolution.
14	Delay attributable to the RAN Reduced Activity Period in the December/January 2010 period, which meant ships were unavailable over a two month period for the conduct of shipboard integration and testing per the original schedule. An additional delay of one month was caused by the unavailability of the US Pacific Missile Range Facility where the live-fire test events are scheduled to be conducted.
15	Update of Materiel Acquisition Agreement (MAA) has recognised the need to allow for update of the software to account for issues in the test program that need to be corrected before being fielded for operational use. The revised MAA now allows for both a correction and regression test period and a roll-out to all ships and shore sites depending on the availability of those locations within the RAN FGP and Training Program.
16	**Finalisation of the Stage 2 baseline Combat System software for operational fielding of the final Mid Course Guidance capability was scheduled to occur by early 2012. Issues with the Fire Control radars have been identified during the on-going regression tests for the planned final software and resolution has required additional shipboard testing conducted aboard HMAS *Newcastle* late June 2012. Data analysis is progressing and the MCG software baseline release is imminent.**

3.3 Progress Toward Materiel Release and Operational Capability Milestones

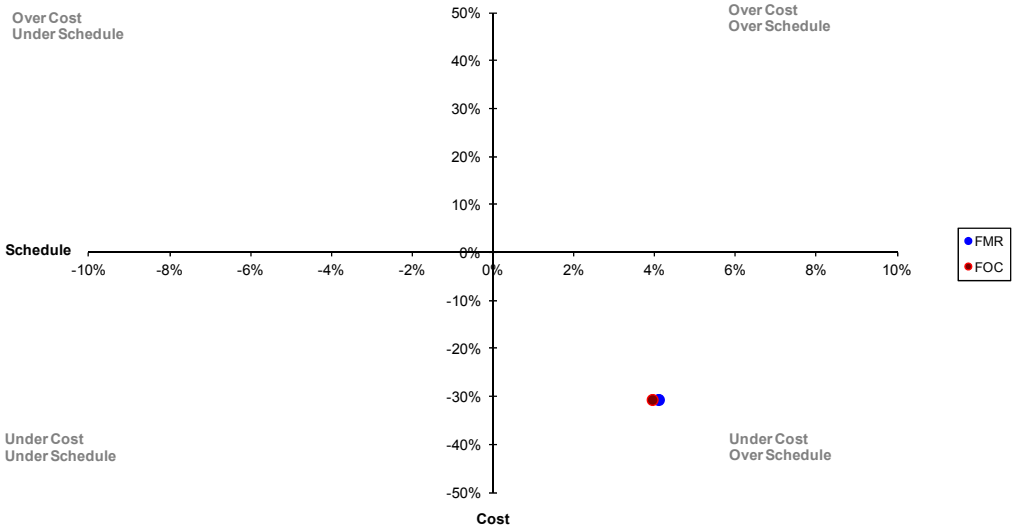
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Dec 09	N/A	
Initial Operational Capability (IOC)	Aug 10	Aug 10	0	
Final Materiel Release (FMR)	Sep 12	**Jan 13**	**4**	**Materiel Release events have been aligned to Navy's 2012 Force Generation Plan and ship Usage Upkeep Cycle. SM-2 Stage 2 MCG final software baseline will be ready for roll-out in June 2012 but a revised ship availability program will currently delay this activity to at least 4th quarter 2012.**
Final Operational Capability (FOC)	Dec 12	**Apr 13**	**4**	**Processes subsequent to FMR to achieve FOC will take some time to complete.**

Schedule Status at 30 June 2012



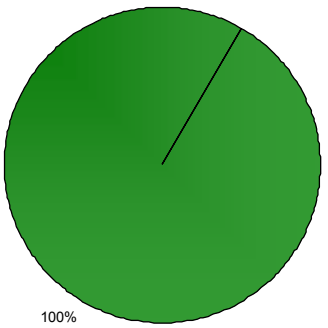
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	**Green:** The project is currently meeting the capability requirements as expressed in the Materiel Acquisition Agreement.
	Amber: N/A
	Red: N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that the SM-2 test program will be affected by the non availability of Target/Range services to conduct firing within Australia leading to a delay to schedule and increased costs.	The FFG SPO is engaging the RAN operators and regulators to provide indigenous Test & Evaluation options. **This risk has been reassessed by the project and is now rated as a medium risk.**
There is a chance that US Government FMS Technical Services and commercial contracts with US based OEMs may exceed allocated Budget per service.	**Commonwealth accept the risk and allocate contingency as required. Additional provision for FMS and commercial technical services, and test and evaluation activities have been programmed.** **This was reported as an Issue in the 2010-11 MPR but has been reverted to a Risk as funding for existing contracts/services, additional FMS and commercial technical services are pending negotiation/contract, as well as provision for further OT&E have been programmed in the 2012-13 Portfolio Budget Statements.** **OEM and commercial contracts/services have been delivered and therefore this risk can be retired.**
Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
N/A	N/A

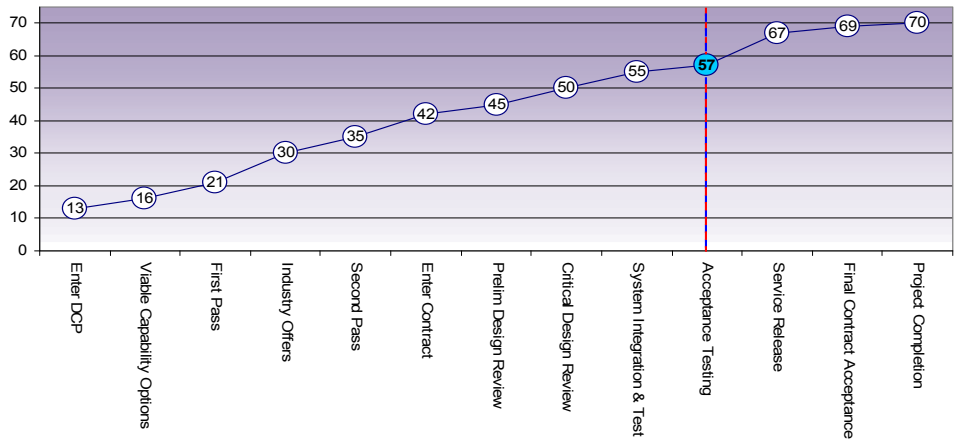
6.2 Major Project Issues

Description	Remedial Action
Project delivery and timing will not be met if appropriately qualified and experienced Project staff are not recruited.	Increase Australian Public Service position levels to attract/retain personnel. Engage professional service providers to meet shortfall in required expertise. **This is an on-going issue as commercially engaged technical support is required to deliver and finalise the Project. Funding provision for commercial support is programmed to FY 2013-14. Additionally, the number of unfilled positions within the FFG Systems Program Office (SPO) and current recruitment freeze is posing a significant challenge to SPO business, which is having an impact on the Project.**
The installation and test program, necessary to deliver the SM2 capability to meet the In-Service Dates, will be affected by the unavailability of Upgraded FFGs, due to their Fleet Activity Schedule (now Force Generation Plan).	**This was identified as a risk in the 2010-11 MPR and has now been realised. Navy operational requirements and revised ship availability schedule has delayed Mid Course Guidance software rollout by at least 3 months.**

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	8	8	8	8	9	8	8	57
Acceptance Testing	Project Status	8	9	9	7	9	8	7	57
	Explanation	• **Cost: The project is well advanced. Remaining activities to achieve the endorsed SM-2 capability state are nearing completion. High confidence in cost estimate to complete the project within cost. Risks/issues with cost implications managed accordingly and sufficient contingency provision is available (if required)**. • **Requirement:** HMAS *Sydney* has successfully completed the Stage 2 Mid-Course Guidance lead-ship Acceptance Test live fire events (June 2011). • **Technical Understanding:** Knowledge needs to operate and support the solution understood. No major impediments to acquiring and transferring this knowledge to the RAN. • **Operations and Support:** The support systems have been defined and procurement of long-lead support elements progressed.							



2010-11 DMO MPR Status - - - - 2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Two stage contracting: Contract Development Agreements facilitate early positive engagement with the contractor, joint development of the resultant fixed price contract and establishes an effective and cooperative work environment.	Requirements Management Contract Management
The establishment of commercial contracts were based entirely on deliverable items and artefacts (software build states and/or documentation in electronic format) and progress against agreed milestones. Payments were made on delivery acceptance and milestones achieved in accordance with the contract. Reliance on Contract Earned Value Management requires considerable effort and expertise on the part of the Project Authority to adequately assess contractor performance, and was not utilised or necessary to achieve 'value for money' Project objectives.	Contract Management
For significant and high technological upgrades to major systems the acquirer (Commonwealth) acting as the Procurement Coordinator managing separate contracts directly with Original Equipment Manufacturers allows for better risk management, schedule control and influence on the quality of the contracted supplies.	Requirement Management Contract Management Performance (Quality)
Significant efficiencies were achieved for ease of handling, delivery, traceability and tracking of documents through electronic document delivery which was encouraged in all commercial contracts and the primary Foreign Military Case.	Contract Management

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	RADM Peter Marshall
Branch Head	CDRE Michael Houghton
Project Director	Mr Mal Adams **(to Nov 11)** **CAPT Greg Reid, RAN (Nov 11–Feb 12)** **CAPT Mona Shindy, RAN (Feb 12–current)**
Project Manager	Mr Mal Adams (**to Nov 11)** **CAPT Greg Reid, RAN (Nov 11–Feb 12)** **CAPT Mona Shindy, RAN (Feb 12–current)**

Project Data Summary Sheets

Project Data Summary Sheet[256]

Project Name	**ANZAC ANTI-SHIP MISSILE DEFENCE**
Project Number	**SEA 1448 Phase 2A**
Capability Type	Upgrade
Service	Royal Australian Navy
Government 1st Pass Approval	N/A
Government 2nd Pass Approval	Nov 03
Total Approved Budget (Current)	**$386.0m**
2011-12 Budget	**$42.3m**
Project Stage	Acceptance Testing
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

The Anti-Ship Missile Defence (ASMD) upgrade SEA1448 Phase 2 project will provide the ANZAC Class Frigates with an enhanced level of self defence against modern anti-ship missiles. There are two sub-phases of SEA1448 Phase 2. Phase 2A of the ASMD Project, is to upgrade all eight of the ANZAC Class Ship's existing ANZAC Class Combat Management Systems (CMS) and fire control systems, and install an Infra-Red Search and Track (IRST) System which will provide improved detection of low level aircraft and anti-ship missiles when the ship is close to land.

1.2 Current Status

Cost Performance

As at 30 June 2012, project SEA 1448 Phase 2A has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

The systems being provided under Phase 2A are being delivered to schedule. Overall though, due to the linking of Phase 2A with Phase 2B and the Government approving a change of acquisition strategy for Phase 2B in August 2009, there is a 38 month variance to the original delivery of the capability. **With the Real Cost Increase (RCI) for Phase 2B for the follow on ships 2-8 in November 2011, there is now a 10 month variance to the delivery of the final capability as advised in the 2009 Cabinet Submission. During 2011-12, schedule has continued to be maintained. This equates to a 70 month Variance to the original approvals for this Phase of the Project.**

[256] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

Materiel Capability Performance

The Initial Materiel Release was claimed for Stage 1 Capability on HMAS Perth on 24 June 2011. The Chief of Navy **formally provided Initial Operational Release (IOR) for** ASMD upgrade capability delivered to HMAS *Perth* and its associated support systems on **16 August** 2011. **The Project is continuing to progress Stage 2 Capability and is on track.**

1.3 Project Context

Project	Explanation
Background	The need for an Anti-Ship Missile Defence (ASMD) capability in the Royal Australian Navy's (RAN) surface fleet was first foreshadowed in the 2000 Defence White Paper. SEA 1448 Phase 2A is the initial phase of the ANZAC ASMD Program, performed by the ANZAC Alliance (Commonwealth plus BAE Systems (previously Tenix) and Saab Systems), to provide ship systems capable of integrating missile defence systems. Phase 2A was approved by Government in November 2003 for $475m (December 2003 prices). This included an element for the Very Short Range Air Defence System (VSRAD) (two per ship) of $155.5m, which was quarantined pending the outcome of investigations into an active phased array radar system (referred to as CEAFAR) and its Sea trials conducted in 2004. SEA 1448 Phases 2A and 2B are being managed as a confederated ASMD Project due to their common systems engineering disciplines, schedules and risks. Phase 2A represents a low risk due to its in-service equipment, whereas Phase 2B represents a high risk due to the leading edge (developmental) technology involved, and these risks migrate as enterprise risks to the confederated SEA 1448 Phase 2 ASMD Project. As a result of technical issues in the integration of the phased array radar into the Class with Phase 2B of the ASMD Project in 2007, a change to the Phase 2B Project acquisition strategy has caused delays in the installation of the equipment being purchased under Phase 2A. These delays do not impact on the delivery of the Phase 2A equipment, which is being delivered into store and appropriately maintained until the Phase 2B acquisition strategy calls on the equipment for installation. To support the upgraded Mk3E Combat Management System and IRST, a combined ASMD Integration and Training Centre was built by the Defence Support Group (DSG) in 2006. This building was added to the existing ANZAC System Support Centre (ASSC) located at HMAS *Stirling* in Western Australia. This facility was made available for lead ship training between September 2010 and April 2011 and **was** formally handed to Navy in August 2011. The only remaining contract yet to be signed for Phase 2A of the ASMD Project is for the first 3 years of in service support for the IRST. This was intended to occur before December 2010, but due to contractual considerations this has been delayed to **3rd quarter of 2012**. The support for the Mk3E Combat Management System is already in contract as there is an existing sustainment support contract with Saab Systems (Australia) for the existing Saab Mk3 Combat Management System that is already installed in the ANZAC Class.
Uniqueness	The Phase 2A Combat Management System upgrade is the next generation of the Mk3E system initially installed on the final ANZAC Class Frigate (HMAS *Perth*). The Mk3E was the first XP windows based commercial off the shelf combat management system in the RAN and was initially installed in HMAS *Perth* as part of a de-risking trial. This Phase of the ASMD Project is currently fully contracted through the ANZAC Ship Alliance.

Major Challenges	The Major Challenges for SEA 1448 Phase 2A have been: • The decision to investigate the option of a Phased Array Radar for Phase 2B in lieu of the originally selected VSRAD option. Consequently, Phase 2A was directed to commence in isolation to the Phase 2B decision. The planned decision of December 2004 to use the Phased Array Radar in Phase 2B was delayed to September 2005, impacting on the systems engineering aspects of the project, as several decisions made during the first year were required to be revisited when the Phase 2B decision was made to ensure the viability of the decision and design. This has also delayed the completion of the integration and training facilities at the ANZAC Systems Support Centre; and • Ensuring sufficient spares for the Commercial-Off-The-Shelf (COTS) based Combat Management System has been mitigated through the procurement of key COTS components of the ASMD Mk3E Combat Management System.
Other Current Projects/Sub-Projects	**SEA 1448 Phase 2B** - This Phase completes the ASMD Upgrade by delivering a Phased Array Radar (PAR) system consisting of a target indication and tracking radar titled CEAFAR and a missile illuminator system, titled CEAMOUNT which will provide mid course guidance and terminal illumination to the Evolved Sea Sparrow Missile (ESSM). This phase also replaces the existing ANZAC Class navigation radar.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
SEA 1448 Phase 2B **ANZAC ASMD**	This Phase completes the ASMD Upgrade by delivering a PAR system consisting of a target indication and tracking radar titled CEAFAR and a missile illuminator system, titled CEAMOUNT which will provide mid course guidance and terminal illumination to the ESSM. This phase also replaces the existing ANZAC Class navigation radar.	SEA 1448 Phases 2A and 2B are being managed as a confederated ASMD Project due to their common systems engineering disciplines, schedules and risks. As a result, any delays in delivery of Phase 2B will drive delays with Phase 2A.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Jan 04	Original Approved		449.0	
Aug 04	Real Variation – Budgetary Adjustments	(0.1)		
Mar 06	Real Variation – Transfers	(155.4)		1
Feb 07	Real Variation – Transfers	(4.4)		2
			(159.9)	
Jul 10	Price Indexation		101.3	3
Jun 12	Exchange Variation		**(4.4)**	
Jun 12	**Total Budget**		**386.0**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – SAAB Systems Pty Ltd CMS	**(105.9)**		**4**
	Contract Expenditure – SAAB Systems Pty Ltd FOC	**(9.5)**		**5**
	Contract Expenditure – BAE Systems Australia CMS	**(86.6)**		**6**
	Contract Expenditure – BAE Systems Australia FOC	**(20.7)**		**7**
	Other Contract Payments / Internal Expenses	**(14.3)**		**8**
			(237.0)	
FY to Jun 12	Contract Expenditure – SAAB Systems Pty Ltd CMS	**(7.3)**		4
	Contract Expenditure – SAAB Systems Pty Ltd FOC	**(6.2)**		5
	Contract Expenditure – BAE Systems Australia CMS	**(6.5)**		6
	Contract Expenditure – BAE Systems Australia FOC	**(14.6)**		7
	Other Contract Payments / Internal Expenses	**(0.1)**		8
			(34.7)	
Jun 12	**Total Expenditure**		**(271.7)**	
Jun 12	**Remaining Budget**		**114.3**	

Notes	
1	**$155.4m** transferred to Project SEA1448 PH 2B for phased array radar procurement with procurement of Very Short Range Air-Defence (VSRAD) capability as directed by Government.
2	Transferred to DSG for facilities funding of the ASMD Systems Integration and Training Centre.
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $88.7m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $12.5m having been applied to the remaining life of the project.
4	Expenditure on the contract for upgrading the eight Combat Management Systems and Fire Control Systems.
5	Expenditure on the contract for First of Class Installation of the Combat Management Systems and Fire Control System.
6	Expenditure on the contract for eight Infrared Search and Track Systems.
7	Expenditure on the contract for First of Class Installation of the Infrared Search and Track System.
8	Other expenditure comprises: operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned top five contracts and minor contract expenditure.

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**A delay in the Real Cost Increase approval has caused a slippage in the spend profile for the Follow on ship contract (FON) for ANZAC ships 2 - 8. The calculation for Gainshare is completed in the SAAB and BAE contracts and the efficiency savings have been shared between the Commonwealth and Industry. The FON for ships 2-8 was signed on 20 January 2012 and the projects budget plan will be re-baselined during the Additional Estimates exercise in July 2012.**
			Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(7.6)	Commonwealth Delays	
42.3	**34.7**	**(7.6)**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at Signature $m	Price (Base) at 30 Jun 12 $m	Type (Price Basis)	Form of Contract	Notes
SAAB Systems Pty Ltd	Apr 05	123.1	119.7	Variable	Alliance	
SAAB Systems Pty Ltd	Apr 07	9.9	13.9	Variable	Alliance	
BAE Systems Australia	Apr 05	104.9	108.6	Variable	Alliance	1
BAE Systems Australia	Apr 07	26.2	27.5	Variable	Alliance	1
BAE Systems Australia	**Jan 12**	**74.9**	**74.9**	**Variable**	**Alliance**	**1**

Notes

1	These contracts are listed with BAE Systems Australia, formerly Tenix Defence.

Contractor	Quantities as at Signature	Quantities as at 30 Jun 12	Scope	Notes
SAAB Systems Pty Ltd	8	8	Combat Management Systems and Fire Control System upgrades	1
SAAB Systems Pty Ltd	N/A	N/A	First of Class (Lead Ship) Installation	
BAE Systems Australia	8	8	Infrared Search and Track Systems	1
BAE Systems Australia	N/A	N/A	First of Class (Lead Ship) Installation	
BAE Systems Australia	**7**	**7**	**Ships 2-8 Installation**	

Major equipment received and quantities to 30 Jun 12

All major design reviews completed. Equipment has been delivered into store and is being appropriately maintained until required by Ph2B for its installation.

Notes

1	**$155.4m** transferred to Project SEA1448 PH 2B for phased array radar procurement with procurement of VSRAD capability as directed by Government.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	Mk3E Combat Management System/Fire Control Director/Infra-Red Search and Track – Stage 1 (Requirements Review)	Feb 04		Aug 05	18	1
	Mk3E Combat Management	Apr 05		Aug 06	16	1

	System/Fire Control Director – Stage 1 (Functional Review)					
	Mk3E Combat Management System/Fire Control Director – Stage 1 (System Performance Review)	N/A		Nov 06	N/A	
	ASMD Shore Facilities (HMAS *Stirling*)	N/A		May 06	N/A	
Preliminary Design	Mk3E Combat Management System/Fire Control Director/Infra-Red Search and Track System – Stage 1	Nov 05		Aug 07	21	1
	ASMD Shore Facilities (HMAS *Stirling*)	N/A		Nov 06	**N/A**	
Critical Design	Stage 1 Critical Design Review – Part 1 (All except Phased Array Radar in the AFT mast)	Sep 06		May 08	20	1
	Stage 1 Critical Design Review – Part 2 (Remaining components of AFT mast)	N/A		Aug 08	**N/A**	
	ASMD Shore Facilities (HMAS *Stirling*)	N/A		Jun 07	**N/A**	

Notes	
1	Variances indicated are directly linked to: the Government decision to investigate phased array radar technologies in lieu of the requirement for the VSRAD system; and, a realisation of technical risks in Phase 2B which required re-engineering effort to redesign the integration of the phased array radar into the ANZAC platform.

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Test Readiness Review	HMAS *Perth* with upgraded ASMD System (Mk3E Combat Management System/Fire Control Director/Infra-Red Search and Track - Sea Phase)	Nov 07		Mar 11	40	1, 2
Acceptance	HMAS *Perth* with upgraded ASMD System (Mk3E Combat Management System/Fire Control Director/Infra-Red Search and Track - Sea Phase)	Apr 08	Jun 11	Jun 11	38	1

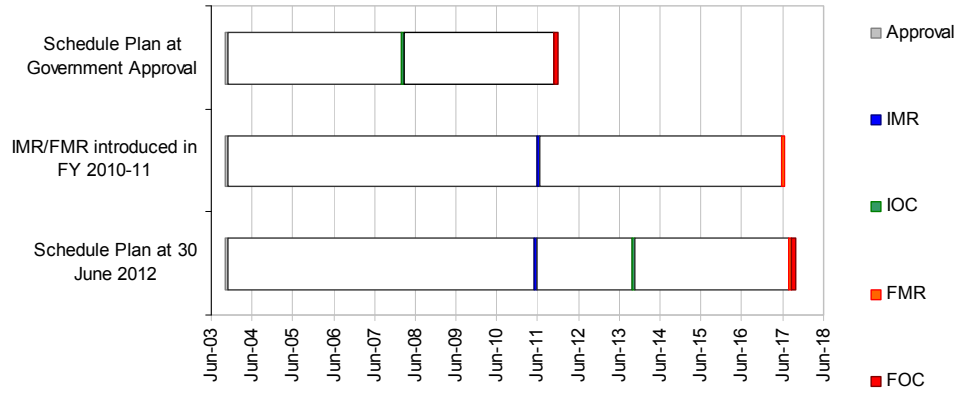
Notes	
1	Variance indicated is directly linked to the Government decision to investigate phased array radar technologies in lieu of the requirement for the VSRAD system and a realisation of technical risks in Phase 2B which required re-engineering effort to redesign the integration of the phased array radar into the ANZAC platform.
2	Additional variance of 1 month due to production completion delay of 1 month in lead ship HMAS *Perth*.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	N/A	Jun 11	N/A	
Initial Operational Capability (IOC)	Mar 08	**Nov 13**	**68**	Variance is directly linked to: the Government decision to investigate phased array radar technologies in lieu of the

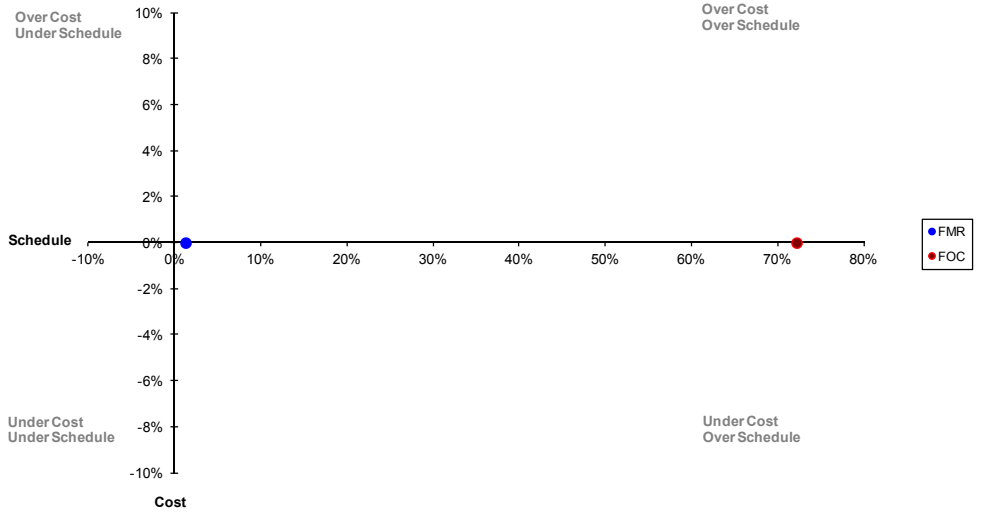
				requirement for the VSRAD system; and, a realisation of technical risks in Phase 2B which required re-engineering effort to redesign the integration of the phased array radar into the ANZAC platform. **The new variance is linked to the updated Materiel Acquisition Agreement (MAA) which moved IOC until after PAR has been proven against Super Sonic Targets.**
Final Materiel Release (FMR)	Jul 17	**Sep 17**	**2**	Newly added DMO milestone as part of update to the MAA between Defence and DMO. *Note: this **variation is due to the approval of ships 2-8 by Government.***
Final Operational Capability (FOC)	Dec 11	**Oct 17**	**70**	Variance is a result of the ASMD Project Management Stakeholder Group agreeing to link the completion date of this Phase of the Project with that of Phase 2B. *Note: this **variation is due to the approval of ships 2-8 by Government.***

Schedule Status at 30 June 2012



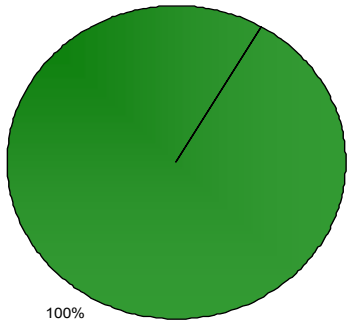
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	**Green:** Based on lead ship (HMAS *Perth*) successful acceptance testing and initial **operational release** being achieved in **August** 2011, the Project is currently meeting capability requirements as expressed in the suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities.
	Amber: N/A
	Red: N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that any delays in phased array radar component of Phase 2B will impact installation of Phase 2A products. This risk **has been downgraded to medium and** will remain until completion of all subsequent ships.	The equipment being delivered under Phase 2A independently undergoes partial system test and system integration before being warehoused awaiting ship installation. As a result, equipment delivered under Phase 2A will be ready for installation pending outcomes from Phase 2B.
Recognising that the Infra-Red Search and Track System being installed under Phase 2A is a new capability being fielded by the RAN for the first time, there is a chance it will not operate to the expectations.	Project has had an operational system at the ANZAC Systems Support Centre in Western Australia since the end of 2007 and has been ensuring that the RAN have been actively involved in its testing and operation. Successful completion of acceptance testing for HMAS *Perth* has seen all systems achieving initial materiel certification in June 2011.
Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
N/A	N/A

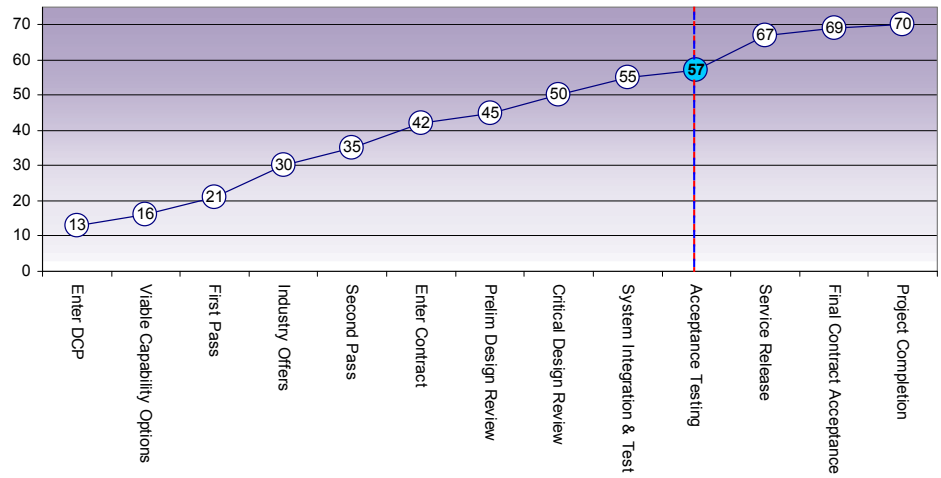
6.2 Major Project Issues

Description	Remedial Action
N/A	N/A

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	8	8	8	8	9	8	8	57
Acceptance Testing	Project Status	8	8	9	7	9	8	8	57
	Explanation	• **Requirement:** Phase 2A is well understood in this area; the upgrade of the Combat Management System to Mk3E and the introduction of the Infra-Red Search and Track System are low risk to the Project and well understood to the customer. • **Technical Understanding:** With the Infra-Red Search and Track System being new to the RAN (although fielded elsewhere in foreign Navies), there is some risk that the use of this technology will not be fully understood until a period of operation has occurred. Although sea acceptance trials are now successfully complete, Navy operational test and evaluation will not complete until 2013.							



2010-11 DMO MPR Status - - - - 2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Adequate implementation of Project Systems Engineering processes. In light of this, the ASMD Project has rigidly followed a disciplined systems engineering process that has ensured the complete traceability from requirements through to final acceptance testing.	Requirements Management
Ensuring that Stakeholder engagement at all levels (engineering and strategic) is culturally embedded within the Project Team.	Contract Management

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	RADM Peter Marshall, RAN
Branch Head	CDRE Michael Houghton, RAN
Project Director/Manager	CAPT Rob Elliott, RAN **(to Nov 11)** **Mr John Runge (Nov 11–current)**

Project Data Summary Sheet[257]

Project Name	**FOLLOW ON STAND OFF WEAPON**
Project Number	**AIR 5418 Phase 1**
Capability Type	New
Service	Royal Australian Air Force
Government 1st Pass Approval	Aug 04
Government 2nd Pass Approval	Dec 05
Total Approved Budget (Current)	**$340.8m**
2011-12 Budget	**$32.8m**
Project Stage	**Service Release**
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

This project will acquire the Lockheed Martin AGM-158A Joint Air-to-Surface Standoff Missile (JASSM) and support systems, and integrate the JASSM onto the Royal Australian Air Force (RAAF) F/A-18 A/B Hornet aircraft. The Follow On Stand Off Weapon (FOSOW) system will increase aircraft survivability and weapon terminal effectiveness against defended targets from launch ranges in excess of those afforded using air delivered weapons currently in the ADF inventory. The FOSOW system will provide the capability to successfully, and effectively, conduct stand-off strike operations against a range of targets.

1.2 Current Status

This Project **was made** a Project of Concern **on 23** November 2010 **and was removed from the list on 23 December 2011.**

Cost Performance

As at 30 June 2012, project AIR 5418 Phase 1 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

The project is meeting the revised schedule approved by Government in May 2011. Initial Material Release (IMR) was achieved July 2011, Material Release 2 (MR2) was achieved in November 2011, and Initial Operational Capability (IOC) was achieved in December 2011. Final Material Release (FMR) and Final Operational Capability (FOC) are currently on track.

[257] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

Materiel Capability Performance

Two successful JASSM Live Fires were conducted from Australian F/A-18 A/B Hornet aircraft at Woomera in July 2011. Following a positive Airworthiness Board (AwB) the Chief of Air Force (CAF) issued Supplemental Type Certification and Service Release for the F/A-18A/B JASSM capability on 1 November 2011, and declared IOC on 13 December 2011.

1.3 Project Context

Project	Explanation
Background	**Project AIR 5418 was originally scoped to acquire a FOSOW capability to provide Australia with the ability to conduct effective airborne precision land strike against well-defended targets. The F/A-18 A/B Hornet aircraft was nominated as the delivery platform to carry and employ the FOSOW system.** **Lockheed Martin's JASSM was selected as the preferred option following the tender process and Project AIR 5418 Phase 1 gained Second Pass Approval on 5 December 2005.** **JASSM is being procured through — a Foreign Military Sales (FMS) Case with United States Air Force (USAF) for the supply of the operational and test missiles, support equipment and USAF program management support; a FMS case with the United States Navy (USN) for weapon to aircraft integration; and a Direct Commercial Sales contract with Lockheed Martin Missiles and Fire Control (LMMFC) for the supply of certification/airworthiness data, integration support, and missile capability enhancements.** **Originally Project AIR5418 was required to deliver a fixed and relocatable targets capability which achieved Initial Operational Capability (IOC), and a mobile maritime targets capability which achieved Final Operational Capability (FOC). Due to lack of program funding by the USAF for the maritime strike capability, it no longer became a feasible option for Australia. This was also agreed to by the Defence Capability and Investment Committee (DCIC) on 28 May 2010.** **Integration of JASSM onto the F/A-18 A/B Hornet was undertaken by the USN Advanced Weapons Laboratory at China Lake, California. The integration effort required the inclusion of the JASSM capability into the F/A-18 A/B Hornet Operational Flight Program (OFP) software.** **A successful JASSM live firing was completed at the USN China Lake Weapons Range on 3 December 2010. Analysis of data from this test firing confirmed JASSM functionality in the 21X OFP software, resulting in a Letter of Certification being issued by the USN on 28 February 2011.** **A Cabinet Submission was developed advising the status of Project AIR 5418 and was noted by Government in May 2011. The submission removed moving target capability from the scope of the project, included a Real Cost Decrease of $50 million and revised definition requirements for IOC, FOC, Initial Material Release (IMR) and Final Material Release (FMR).** **In July 2011 two successful JASSM firings took place at the Woomera Test Range and demonstrated an IOC level of capability. Following on from positive recommendations from the Airworthiness Board, AIR5418 achieved IOC in December 2011.** **The Project is now required to deliver remaining stock of JASSM in order to fulfil FOC/FMR requirements and are currently on track to achieve this by December 2012.**
Uniqueness	JASSM is an Australianised Military-Off-The-Shelf (MOTS) guided weapon acquisition. The Commonwealth of Australia was the first FMS customer authorised by the US Department of State to purchase this product. This weapon is operated by the USAF from platforms which are not in the Australian inventory. Australian integration of JASSM onto the F/A-18 A/B Hornet platform is a world first. JASSM represents the longest range (greater than 300 kilometres) guided weapon to be introduced into ADF capability, and as a result poses safety challenges for test/training over Australian land ranges.

Major Challenges	As this project represents the first integration of JASSM into the F/A-18 A/B Hornet platform, anomalies discovered during the software integration process had not been experienced previously by the USN (developers of the F/A-18 A/B Hornet OFP software) or the original equipment manufacturers – Lockheed Martin. Consequently, extensive engineering effort was required for software integration. Integrating newer weapon technology with older aircraft technology has presented many challenges; for example, host platform upgrades not required in the past are now required. The maximum range of JASSM exceeds the size of all available test ranges, including the Woomera Test Range. Extant ADF range safety methodologies cannot be applied and Government agreed to adopt US range standards, and accept the risk posed by the JASSM testing planned to be conducted at the Woomera Test Range. There are some elements of JASSM, particularly software design data, which have not been provided to Australia due to US foreign disclosure and proprietary information restrictions. Gaining the required design disclosure to achieve technical certification has been difficult or unachievable due to the US Government International Trade in Arms Regulations restrictions.
Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
AIR 5376 Phase 2 Hornet Upgrade	**The Air 5376 Phase 2 Project was established to upgrade the existing F/A-18 fleet to incorporate enhancements to the aircraft's air defence capability. Enhancements are being implemented in three distinct stages. The first is to enable the aircraft to more effectively perform its air defence role. The second stage involves enhancing pilot situational awareness, and the final stage is providing additional aircraft self protection.** **In addition to these hardware upgrades of the F/A-18 Fleet, each stage includes new or upgraded aircraft software and ground support and training systems.**	AIR 5418 is reliant upon Hornet Upgrade Phase 2 for delivery of the Joint Mission Planning System and upgraded F/A-18 A/B Hornet Operation Flight Program software (21X), required to enable the operation of JASSM on the Hornet.

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Aug 04	Original Approved		14.9	1
Dec 05	Government Second Pass Approval	355.3		
Jun 11	Real Cost Decrease	(50.0)		2
			320.2	
Jul 10	Price Indexation		**62.6**	3
Jun 12	Exchange Variation		**(42.0)**	
Jun 12	**Total Budget**		**340.8**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – US Government	**(134.1)**		4
	Contract Expenditure – Lockheed Martin	**(78.2)**		
	Other Contract Payments / Internal Expenses	**(32.4)**		5
			(244.7)	
FY to Jun 12	Contract Expenditure – US Government	**(26.1)**		
	Contract Expenditure – Lockheed Martin / Pacific Aerospace Corporation	**(2.8)**		
	Other Contract Payments / Internal Expenses	**(3.5)**		6
			(32.4)	
Jun 12	**Total Expenditure**		**(277.1)**	
Jun 12	**Remaining Budget**		**63.7**	

Notes	
1	First Pass approval.
2	Government Approved Real Cost Decrease in June 2011 to remove moving target from project scope.
3	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $59.2m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $3.4m having been applied to the remaining life of the project.
4	Section **2.3** Prime Acquisition Contracts covering acquisition of the JASSM Materiel System and integration with the F/A-18 have been combined due to classification.
5	Other expenditure comprises: operating expenditure, contractors, consultants, other capital expenditure (e.g. travel) not attributable to the aforementioned top three contracts and minor contract expenditure.
6	Other expenditure to June **2012** includes activities by Defence Science & Technology Organisation, Aerospace Operational Support Group, Tactical Fighter Systems Program Office integration support, Joint Mission Planning System (JMPS) support and specialist engineering services for the AIR 5418 Project Office.

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The end year variation of ($0.4m) is due to the delay in commencement of production and installation of the Precision Strike Targeting Local Area Network (PSTL) due to design and development delays. This has been re-programmed to FY 2012-13.**
			Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(0.4)	Commonwealth Delays	
32.8	**32.4**	**(0.4)**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
US Government (x 2 FMS cases)	Jul 06 Jun 06	160.4	**213.7**	FMS	FMS	1
Lockheed Martin	Sep 06	67.1	**91.3**	Fixed/Firm	ASDEFCON	

Notes

1	Prime Acquisition Contracts covering acquisition of the JASSM system and software integration with the F/A-18 A/B have been combined due to classification.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
US Government	Classified	Classified	JASSM Operational and Test Missiles	1
Lockheed Martin	Various	Various	JASSM Data, Training and Integration Support.	
US Government	Various	Various	F/A-18 A/B Hornet OFP Software development, testing and certification.	2

Major equipment received and quantities to 30 Jun 12

All major Design and Build Readiness Reviews have been completed. **Deliveries** of IOC missiles and **initial quantities of FOC missiles have** been achieved. USN certification of F/A-18A/B aircraft software providing JASSM capability achieved.

Notes

1	FMS Case AT-D-YLA
2	FMS Case AT-P-GJO

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
Prior Certification	AGM 158A Missile System	Aug 06	Jan 07	Feb 07	6	1
System Requirements	AGM 158A Missile System	Jun 07	N/A	Jun 07	0	
	F/A-18 A/B System Segment	Sep 05	N/A	Sep 05	0	
Preliminary Design	AGM-158A Missile System		N/A	N/A	N/A	2
	F/A-18 A/B System Segment 21X (IOC)	Mar 06	N/A	May 06	2	3
	F/A-18 A/B System Segment 23X (FOC)	Jun 08	N/A	Jun 08	0	4
Critical Design	AGM 158A Missile System	N/A	N/A	N/A	N/A	2
	F/A-18 A/B System Segment 21X (IOC)	Aug 06	N/A	Mar 07	7	3
	F/A-18 A/B System Segment 23X (FOC)	Jan 09	N/A	Jan 09	0	4
Build Readiness	F/A-18 A/B System Segment 21X (IOC)	Nov 07	N/A	Jul 09	20	3
	F/A-18 A/B System Segment 23X (FOC)	Feb 11	N/A	Feb 11	0	4

Notes	
1	Variance due to protracted commercial contract negotiations. Prior Certification Review was completed in late January 2007. The approval to exit the Prior Certification Review was dated 01 February 2007.
2	The weapon is MOTS. Preliminary Design Review and Critical Design Review issues were addressed in the Prior Certification Review.
3	Data listed is for the F/A-18 21X Build 3.4.1 (JASSM functionality) OFP software which **was** used for the IOC. Variance due to the detection of software anomalies and the undertaking of corrective and preventative action.
4	Data listed is for the F/A-18 23X Build 3.1.3 (JASSM functionality) OFP software which will be used for the FOC.

3.2 Contractor Test and Evaluation Progress

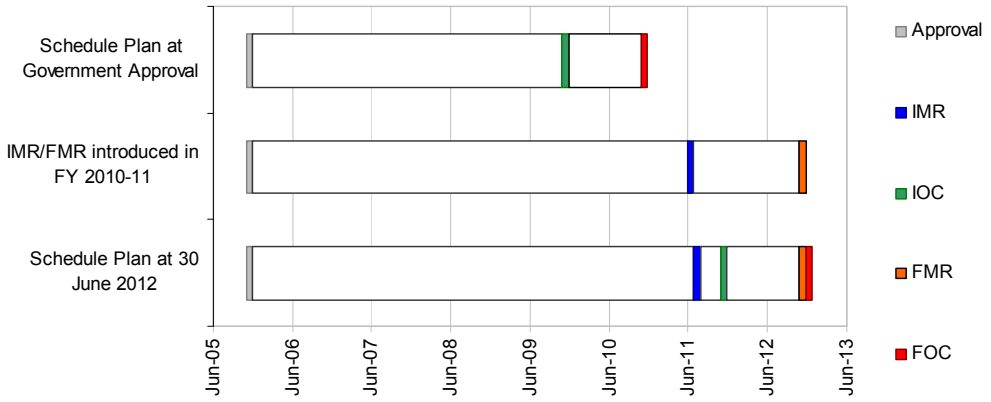
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	JASSM System (Weapon integrated into platform) 21X	Jun 09	Feb 11	Feb 11	20	1
	JASSM System (Weapon integrated into platform) 23X	N/A	Jun 11	Jun 11	0	
Acceptance	JASSM System (Weapon integrated into platform)	Dec 09	Nov 11	Dec 11	23	2

Notes	
1	Data listed is for the F/A-18 21X Build 3.4.1 (JASSM functionality) OFP software which will be used for the IOC. Variance is attributable to the delays associated with correcting software anomalies detected during software development and testing, which required extensive redevelopment and retesting to ensure airworthiness and operational effectiveness.
2	An additional variation of four months between System Integration and Acceptance has been realised due to: delayed delivery of JASSM Test Missiles, Government acceptance of risk associated with Woomera test firings and availability of the Woomera Test Range and support agencies.

3.3 Progress Toward Materiel Release and Operational Capability Milestones

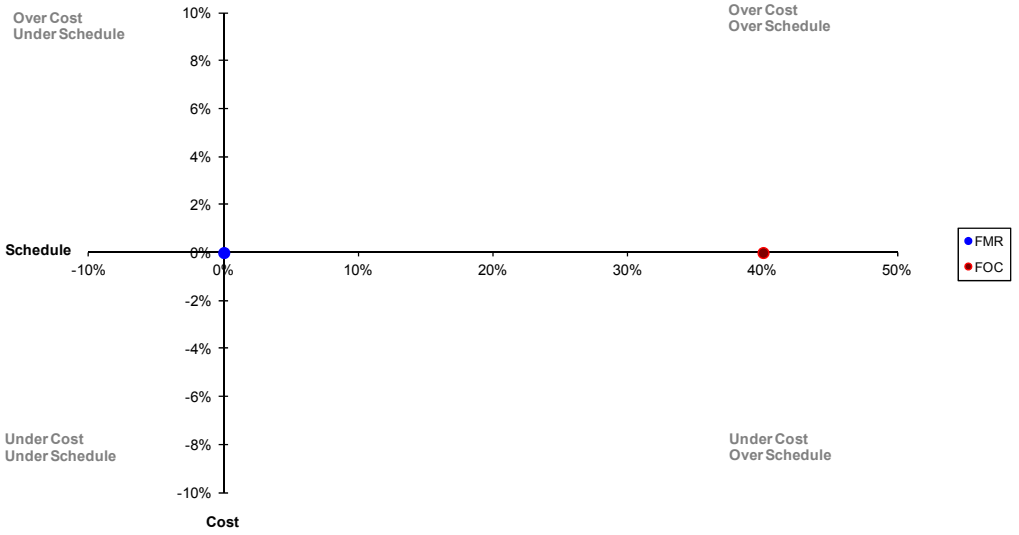
Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Jul 11	**Aug 11**	0	**The AIR 5418 Project Office submitted a minute to the capability manager seeking agreement that AIR 5418 had reached IMR on 5 July 2011. The capability manager signed off on this 3 August 2011.**
Second Materiel Release (MR2)	Dec 11	**Nov 11**	**(1)**	**MR2 was achieved in November 2011 with the issue of the Supplemental Type Certificate and Service Release.**
Initial Operational Capability (IOC)	Dec 09	Dec 11	24	**IOC was declared by CAF on 13 December 2011.** The variance is attributable to delays in the AF/A-18 A/B software development and certification process, which has required extensive testing and redevelopment to ensure airworthiness and operational effectiveness.
Final Materiel Release (FMR)	Dec 12	Dec 12	0	The AIR5418 Project Office is currently working toward achieving a FMR which will allow FOC by December 2012.
Final Operational Capability (FOC)	Dec 10	Dec 12	24	FOC requires delivery of the approved full quantity of JASSM war stock. The FOC war stock missiles are being manufactured in Lot 8. The USAF contract for the Lot 8 missiles was delayed due to US JASSM program delays and missile reliability concerns **but has now resumed production and deliveries are scheduled to occur within approved Materiel Acquisition Agreement (MAA) timeframes.**

Schedule Status at 30 June 2012



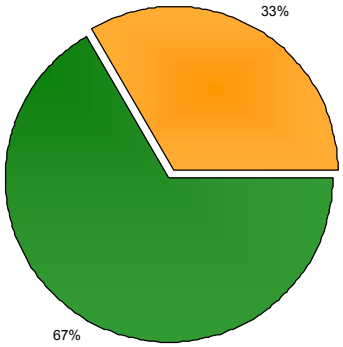
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	**Green:** **JASSM fixed/relocatable target capability will meet revised Government approval.** **Amber:** **Missile production has now resumed due to fuze issue being resolved and deliveries are scheduled to meet FMR/FOC timelines. Production and installation of PSTL is on schedule for FMR/FOC but is being closely monitored due to developmental nature of the network. EO storage facilities are available to meet FOC storage requirements with alternate arrangements being developed for one of the facilities due to required rectification actions.** **Red:** N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
Certification will be affected by JASSM not meeting Technical Airworthiness Regulator (TAR) requirements for airworthiness leading to an impact on schedule, cost and performance.	Project AIR 5418 has engaged Directorate General Technical Airworthiness (DGTA), Capability Development Group and Air Force Headquarters to remediate requirement deficiencies. Progress has been made through the provision of issue papers addressing the technical and airworthiness risks. The remaining TAR risk has been realised and as such is now reflected as an issue regarding unresolved Safety Critical Software issues. This risk/issue will be retired following sign-off of the Issue Papers. **Issue Papers have been signed off and the risk retired.**
IOC will be affected by failure to achieve an acceptable level of capability leading to an impact on Cost, Schedule and Performance.	Thorough development and acceptance testing has been performed by USN at China Lake. Identified performance deficiencies have been addressed (where possible) through engineering re-development. Remaining deficiencies have been assessed as acceptable to allow IMR and progression to IOC. Test assets required to conduct OT&E were delivered in June 2011. This risk will be retired following achievement of MR2. **IOC was achieved by demonstrating an appropriate level of capability at the July 2011 Live Firings and the risk retired.**
Certification will be affected by USN/USAF non or partial release of data leading to an impact on Cost, Schedule and Performance	Project AIR 5418 has engaged with DGTA and solicited Capability Development Group (CDG) support to engage with higher level authority. An issues paper on post launch safety has been prepared for DGTA consideration. The project office has continued to engage with US Air Force for release of data. This risk/issue will be retired following sign-off of the Issue Papers. **Issue Papers have been signed off and the risk retired.**
Delay in obtaining approval to conduct Operational Test and Evaluation in Australia may impact range and test support resources availability, and delay achievement of IOC.	This extreme risk **was** included following reassessment and can be retired following the **Operational Test and Evaluation** (OT&E) event scheduled for 18-29 July 2011. The AIR 5418 project office and Air Combat Group **engaged** Woomera range management for ongoing updates. Potential test dates **were** reserved through range bookings well in advance of testing. AIR 5418 **negotiated** with stakeholders **which enabled** the **OT&E** to proceed as scheduled. **Subsequently OT&E was conducted, this risk is now retired.**

JASSM Certification (against the Functional Performance Specification) will be affected by incomplete software testing or data, requiring further testing to allow full certification. Certification will be affected by USN/USAF none or partial release of data leading to an impact on cost and, schedule and performance.	Project AIR 5418 has engaged with DGTA and solicited CDG support to engage with higher level authority. An issues paper on post launch safety **was also submitted to** DGTA **for** consideration. The project office continued to engage with **the** US Air Force for release of data. **Risk retired following positive recommendations from the AwB.**
The JASSM project will be affected by the lack of skilled/experienced staff leading to an impact on Schedule, Cost, Performance and Sustainability.	This risk is reducing with completion of 21X certification and expected completion of 23X certification. This high identified risk has been included following reassessment. **IOC was declared, this risk is now retired.**
JASSM certification may be affected by incomplete operational testing or test failure, requiring rework and further testing to allow full certification.	**The Project Office has** a full time Test & Evaluation manager, assisted by a uniformed understudy. There has been high level engagement with the Test & Evaluation Working Group members, including Air Force and Capability Development Group. **Risk now retired following successful OT&E event in July 2011.**
FMR will not be realised due to the lack of the specific aspects of mission planning infrastructure support leading to an impact on Performance.	DMO and CDG staff are liaising with Defence Imagery and Geospatial Organisation and Defence Signals Directorate to establish a process to provide the required operational resources to support JASSM mission planning. **This risk is now retired.**
There will be a delay in the approval and issue of the JASSM Instructions for Continuing Airworthiness leading to an impact on Schedule and Supportability.	Publications have been drafted for use at OT&E and will be published prior to IOC. This risk **is now** retired following publication release.
Some of the PSTL specific software will not be compatible with the Defence Standard Operating Environment (DSOE) and potentially affect the use of the software or the interface with the DSN.	This risk has been considered and will be addressed in the development of the PSTL system if issues become apparent. **This risk is now retired.**
Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
There is a chance that JASSM FMR will be affected by delay in USAF LOT 8 production leading to an impact on Schedule.	**Production of Lot 8 has resumed so this risk is now decreasing. Current delivery schedule is within approved MAA timeframes.**
There is a chance that FMR could be delayed due to delay in certifying suitable EO storage facilities leading to an impact on schedule and performance.	**Alternate arrangements are being developed to ensure FOC storage requirements are met.**

6.2 Major Project Issues

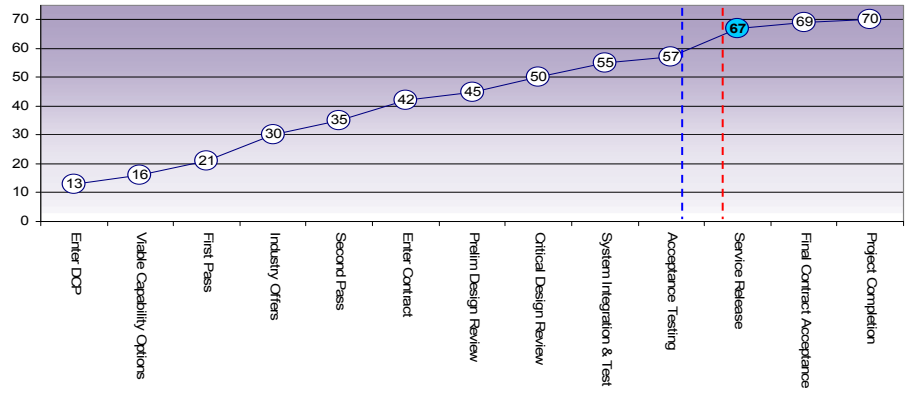
Description	Remedial Action
PSTL Scope – Due to nature of rapid technology advances being made in mission planning and intelligence gathering. These advances have the potential to cause scope creep.	**PSTL scope is subject to oversight by Project Management Steering Group.**
Staffing – Engineering and scheduling staff shortages are affecting project schedule.	**Contractor staff have been sourced to cover the engineering gap. Scheduler staff issue has been resolved through reallocation of resources.**

On 26 November 2010, Minister for Defence and Minister for Defence Materiel announced that AIR 5418 was to be added to the list of 'Projects of Concern' for failure to keep Government properly and fully informed as to the progress with respect to this major project.	As a PoC, Deputy Chief Executive Officer DMO provides an initial Gate Review, oversight of remediation activities, followed by bi-monthly PoC review meetings. A DMO Submission has been drafted and will provide Government with an update on the current project status. **The project was removed from the PoC list on 23 December 2011 and this issue is retired.**
A USAF JASSM test firing failure occurred during January 2011. A USAF Failure Review Board determined that the failure was caused by an unplanned operation of the missile's flight termination system.	To overcome this, the manufacturer has developed a Flight Termination System screening process which has been endorsed and recommended by the USAF. All USAF and Australian JASSM Flight Termination Systems are being screened, and replaced if required, prior to further flight tests. The systems fitted to the Australian test assets have been screened and cleared. **This issue is now retired as consequence and probability of this event are no different to a deliberately terminated weapon as part of a range event and are assessed as acceptable.**

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	**10**	**9**	**10**	**10**	**10**	**9**	**9**	**67**
Service Release	Project Status	**9**	**9**	**10**	**10**	**10**	**9**	**9**	66
	Explanation	• **Schedule: The project is currently within the approved MAA schedule and the missile production and PSTL risks are being managed to maintain this schedule.**							



2010-11 DMO MPR Status - - - -	2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Stability of interfaces on ageing platforms may not be reliable, leading to an underestimation of integration complexity.	First of Type Equipment
Interface Control Documents are not always correct or may not have been interpreted correctly during host platform design.	Requirements Management
Host platform upgrades not required in the past may now be required, due to the minimum technical performance requirements of new systems to be integrated.	First of Type Equipment
Sufficient resident project staff is important to ensure US Government and contractors understand our requirements and expectations.	Resourcing
FMS is a good procurement vehicle when a US program is mature. However, FMS provides little ability for DMO to manage capability and associated risk when US program is less mature and the Commonwealth is the integrator of project outcomes.	First of Type Equipment

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	Mr Anthony Klenthis
Branch Head	Mr Martin Weir
Project Director	**Mr Peter Kiss (to Mar 12)** **WGCDR Jamie Scott (Apr 12)** **Ms Catherine Martin (May 12–current)**
Project Manager	WGCDR Jamie Scott **(to Dec 11)** **SQNLDR Sean Sunley (Jan 12–Apr 12)** **SQNLDR Sheena Oldridge (May 12–current)**

Project Data Summary Sheet[258]

Project Name	**ARTILLERY REPLACEMENT**
Project Number	**LAND 17 Phase 1A**
Capability Type	Replacement
Service	Australian Army
Government 1st Pass Approval	Feb 06
Government 2nd Pass Approval	Jul 09
Total Approved Budget (Current)	**$320.6m**
2011-12 Budget	**$33.1m**
Project Stage	**Acceptance Testing**
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

This project will deliver 35 M777A2 Lightweight Towed 155mm Howitzers (LW155) and the Advanced Field Artillery Tactical Data System (AFATDS) as the Battle Management System - Fires (Command and Control) (BMS-F (C2)) through Foreign Military Sales (FMS) with the United States (US) Government to replace major systems of the current fleet of 105mm and 155mm Howitzers. It is also acquiring the XM1156 Precision Guidance Kit as the Course Correcting Fuze (CCF) capability.

1.2 Current Status

Cost Performance

As at 30 June 2012, project LAND 17 Phase 1A has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

LW155 and BMS-F (C2) capabilities – **The project achieved the Initial Materiel Release (IMR) of November 2011 and** is on track to deliver the required Mission System and Support System materiel for the Final Materiel Release (FMR) in August-September 2013.

The CCF capability is currently not available through US Government FMS. In February 2011, the US Government advised that the CCF will be subjected to a further program of testing prior to reaching a production milestone decision.

Based on the US Government's advice of an 18 month hardware delivery timeframe, achievement of the December 2013 Final Operating Capability (FOC) that includes the CCF capability is at risk**.**

[258] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

Materiel Capability Performance

The Indirect Fire capability sought is as follows:

- The LW155 capability will provide Army with a digitised, mobile, medium indirect fire platform.
- The BMS-F (C2) capability will provide Army with a digitally networked, interoperable command and control system that will allow for automated transmission of digital calls for fire from combat units and the rapid calculation of ballistic solutions and effects for firing.
- The CCF capability will provide Army with improved ammunition precision to minimise collateral damage, avoid incidents of friendly fire and increase lethality against high value targets.

The Project is on track to deliver the LW155 and BMS-F (C2) capabilities; the CCF capability is currently not available for sale. **Land 17 Phase 1A has a dependency on numerous DMO projects whose progress has the potential to impact capability performance.**

1.3 Project Context

Project	Explanation
Background	Government First Pass approval for Land 17 Phase 1A was provided on 14 February 2006, and allowed the project to explore capability solutions to enhance the Australian Army Indirect Fire Support (IFS) system through the replacement or upgrade of the 105mm Hamel Howitzer and 155mm M198 Howitzer fleets when they reach the end of their service life. In July 2009, Government provided Second Pass Approval and agreed to split the Land 17 project into two phases. Phase 1A for delivery of the LW155 and an Australianised AFATDS, and Phase 1B for delivery of the Self Propelled Howitzer (SPH) and the Digital Terminal Control System (DTCS). An FMS Case for the supply of the LW155 was established with the US Government in September 2009. The first M777A2 Lightweight Howitzer arrived in Australia in August 2010, with the remainder expected to arrive during 2011-12. An FMS Case for the supply of the AFATDS was established with the US Government in May 2010. A Systems Requirements Review (SRR) was conducted between Land 17 Phase 1A project, the US Government and Raytheon Network Centric System (NCS) in September 2010 resulting in the US Government signing a contract with Raytheon NCS for the AFATDS. **Initial Materiel Release (IMR) for LW155 and BMS-F(C2) was achieved on 23 November 2011.** A Letter of Request (LOR) was submitted to the US Government for the acquisition of the CCF in September 2009, however in November 2009 the US Government advised that it was unable to offer an LOA as final costs in relation to testing were not available. On advice from the US Government, the LOR was resubmitted in January 2010; however, in September 2010 the US Government advised that the US Program was on hold due to continued delays in the CCF development. In February 2011, the US Government advised that the CCF will be subjected to a further program of testing prior to reaching a production milestone decision which is now planned for December 2012.
Uniqueness	Whilst this project is considered a replacement project, the inclusion of the BMS-F (C2) and the ability to perform digitised calls for fire and ballistic computations is a new capability for the ADF. The digital capability provided by AFATDS and Digital Fire Control System (DFCS) will enable connectivity and interface with external systems and thereby contribute to the higher intent for joint and Network Centric Warfare (NCW).

Major Challenges	**Mission System Architectures –** The creation of the BMS-F Joint Fires Network Architecture was a major technical challenge. Full ADF and **Coalition** interoperability will require a higher order Joint Fires Support **solution** architecture that supports the BMS-F Joint Fires Network. This task is technically challenging and will require engagement of **key** stakeholders. **Integration and interoperability –** with the broader ADF will mean overcoming the following challenges: **Technical –** The LW155 must operate with Army's current and future fleet of vehicles, must be transportable by in-service aircraft and naval vessels, and utilise both in-service and future 155mm ammunition. **Technical –** AFATDS must interface and integrate with multiple systems across the ADF **and Coalition**, which utilise different platforms, standards and protocols. **Commercial –** Combining systems from different Original Equipment Manufacturers (OEM) and countries of origin, where each has specific background and foreground Intellectual Property (IP) restrictions will be commercially challenging. Many of the identified systems, including the LW155 and AFATDS, are subject to the US Government's International Trade in Arms Regulations (ITAR). **Scheduling –** Organising the test and certification activities performed in collaboration with DMO projects and external agencies creates a major schedule challenge. **Sustainment –** The delivery of the Australian AFATDS presents a complex sustainment challenge. Both the hardware and software will require ongoing upgrades in synchronisation with all interfaces throughout the entire Life Of Type of the capability. Land 17 Phase 1A aims to transition an evolutionary acquisition process into the sustainment office.
Other Current Projects/Sub-Projects	**Land 17 Phase 1B:** Covers the acquisition of new and improved Forward Observer (FO) equipment including a Control Terminal and the Tactical Full Motion Video System (TFMVS). **Land 17 Phase 1C:** Covers the acquisition of the Self Propelled Howitzer. **On 8 May 2012 in the 2012-13 Defence Budget Overview, the Government announced the cancellation of the Self Propelled Howitzer and the intended acquisition of the Additional Towed Artillery.**

1.4 Linked Projects

Project	Description of Project	Description of Dependency
JP 2085 Phase 1B Explosive Ordnance Warstock Remediation Project	**JP 2085 Phase 1B has procured the XM982 Excalibur Global Positioning System guided artillery precision munition, as well as the Smart 155 Sensor Fuzed Munition (SFM). JP2085 Phase 1B is also procuring an initial quantity of the AFATDS as part of the Excalibur capability through the FMS program.**	This acquisition of AFATDS was planned to be the baseline mission system and support system for Land 17 Phase 1A to expand. It included integration with ADF vehicles and interoperability with a number of ADF battle systems.
JP 2072 **Phase 1 Battlespace Communications System (Land)**	**JP 2072 is responsible for designing the Battlespace Communications Systems (Land) (BCS (L)) architecture. The BCS (L) will be a 'system of systems' incorporating Combat Net Radio (CNR) and wide band radio, Trunk Communications and local area voice and data systems that will act as the bearers used to network force elements.**	JP 2072 will be the primary acquisition body for the Land 17 Phase 1A communications bearers required under the BMS-F Joint Fires Network architecture.

Land 200 **The Land 200 nomenclature is the combination of the following projects/phases:** • **Land 75 Phase 3.2 and Phase 3.3. Battlefield Command Support System (BCSS);** • **Land 75 Phase 3.4. Battle Management System – Mounted (BMS-M); and** • **Land 125 Phase 3. Battle Management System – Dismounted.**	**The systems within Land 200 will be utilised by manoeuvre elements and generate a current and Common Operating Picture (COP).**	Interoperability with this COP is essential for Land 17 Phase 1A to create a shared situational awareness that is central to the safe and effective application of Joint Fires. **Land 17 Phase 1A is also integrating the AFATDS into the Bushmaster Protected Mobility Vehicle - Command (PMV-C) variant**.
Land 106 **M113 Armoured Vehicles Upgrade Project**	**This project is responsible for upgrading in-service M113A1 vehicles for Army. There will be seven variants of the M113AS produced.**	The primary interface for Land 17 **Phase 1A** will be between AFATDS and the Armoured Command Vehicle (M113 AS4 - C).
Land 116 **Project Bushmaster**	**Land 116 introduced the Protected Mobility Vehicle (PMV) in seven configurations.**	The Land 17 Phase 1A interface will be to the Troop (PMV-T) and Command (PMV-C) variants. The Troop variant has been proposed as the personnel vehicle for the LW155 Gun Crew. The Command variant **is the vehicle platform on which both the Land 75 Phase 3.4 and Land 17 Phase 1A will integrate their respective systems.**

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Nov 03	Original Approved		348.3	
Jun 12	Exchange Variation		**(44.9)**	
Jul 10	Price Indexation		17.2	1
Jun 12	**Total Budget**		**320.6**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – US Government (AT-B-UCZ)	**(69.5)**		
	Contract Expenditure – US Government (AT-B-UDQ)	**(4.9)**		
	Contract Expenditure – Harris Corporation	**(9.7)**		
	Other Contract Payments / Internal Expenses	**(4.7)**		2
			(88.8)	
FY to Jun 12	Contract Expenditure – US Government (AT-B-UCZ)	**(20.3)**		
	Contract Expenditure – US Government (AT-B-UDQ)	**(3.7)**		
	Contract Expenditure – Raytheon Australia	**(3.1)**		
	Other Contract Payments / Internal Expenses	**(5.9)**		2,**3**
			(33.0)	
Jun 12	**Total Expenditure**		**(121.8)**	
Jun 12	**Remaining Budget**		**198.8**	

Notes	
1	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $8.7m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $8.4m having been applied to the remaining life of the project.
2	Other Contract Payments/Internal Expenses: Operating Expenditure, Offer Definition, Consultants, Foreign Military Sales, Contractor Support and Minor Capital expenditure not attributable to the Prime contract.
3	**Other Contract Payments/Internal Expenses (FY to Jun 12): Field Service Representative Support ($1.5m), GETAC laptop procurement ($0.6m), Vehicle Integration ($0.6m), Foreign Military Sales ($0.4m), Cable Assembly ($0.3m), Contractor support ($0.2m) and Other Operating Expenses ($2.3m).**

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		1.2	FMS	**FY 2011-12 expenditure is $33.0m against latest approved plan of $33.1m. Variation of $0.1m is primarily due to AFATDS FMS payment $1.2m brought forward to cover expected increase in engineering services required and foreign exchange loss $1.3m. This increase has been offset by slippage in Radios payments ($0.9m), retirement of funds associated with airlift certification, Mack Gun Tractor modifications ($0.9m) and rescheduling of project management expenses ($0.8m).**
			Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
		1.3	FOREX Variation	
		(2.4)	Commonwealth Delays	
33.1	33.0	0.1	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
US Government (AT-B-UCZ)	Sep 09	130.8	**136.5**	FMS	FMS	
US Government (AT-B-UDQ)	May 10	22.8	**20.6**	FMS	FMS	
Harris Corporation	Feb 11	11.1	11.1	**Firm**	ASDEFCON	

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
US Government (AT-B-UCZ)	35	35	The delivery of M777A2 Lightweight Towed 155mm Howitzer and support system.	1
US Government (AT-B-UDQ)	108	108	The delivery of Australian AFATDS.	2
Harris Corporation	255	255	Supply of HF, VHF and UHF radios, ancillaries and spares.	

Major equipment received and quantities to 30 Jun 12
Thirty-five LW155 received to date.

Notes	
1	Delivery of 20 LW155 **occurred** between November 2011 and **March** 2012. **This brings the total deliveries to 35.**
2	These quantities are exclusive of JP 2085 Phase 1B – The complete quantity is **156 "seat" licences** (combined total), which includes AFATDS software **(qty 108),** Effects Management Tool (EMT) software and **Simulator-Stimulator (SISTIM)** software.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	AFATDS	Sep 10	Sep 10	Sep 10	0	**1, 2**
Preliminary Design Review	**AFATDS/Bushmaster Command Post (CP) – Vehicle Installation Kit (VIK)**	**Jun 12**	**N/A**	**Jul 12**	**1**	**3**

Detailed Design Review	**AFATDS/Bushmaster CP-VIK**	**Oct 12**	**N/A**	**Oct 12**	**0**	**3**

Notes	
1	**First round of System Requirements Review (SRR) held in September 2010. Second round of SRR (post-IMR) to establish IPT agreement on the remaining functional requirements was conducted in March 2012.**
2	As both the LW155 and AFATDS are **Military** Off The Shelf (**M**OTS) acquisitions, there is no Preliminary Design Review **(PDR) nor Critical Design Review.**
3	**PDR and DDR cover design for the Vehicle Installation Kit (VIK) for AFATDS.**

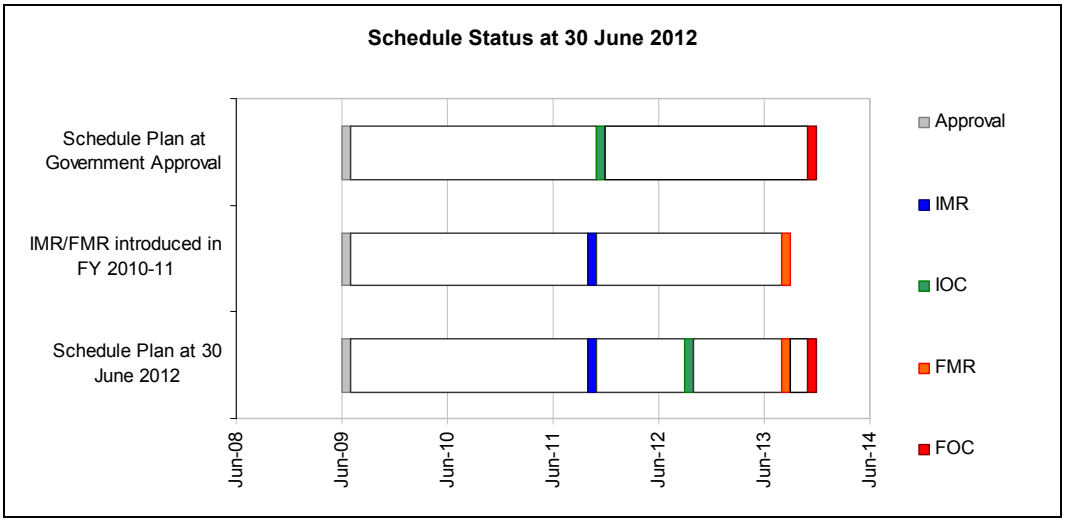
3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	LW155	Sep 11		Sep 11	0	1
	AFATDS	Sep 11		**Mar 12**	**6**	2
Acceptance Test and Evaluation	LW155 **PDA for IMR**	Sep 11		**Nov 11**	**2**	3
	AFATDS **PDA for IMR**	Sep 11		**Nov 11**	**2**	3

Notes	
1	The project **conducted** certification activities in collaboration with relevant Defence agencies.
2	The AFATDS **was** tested and certified with multiple combat management systems **prior to IMR. The System Integration for AFATDS is finalised as required for FMR based on the Factory Acceptance Test (FAT) Report being received in March 2012 for the Final AS version of AFATDS 6.7. The variance is based on the schedule for US Government to approval of the FAT.**
3	**Pre-IMR** Acceptance Test and Evaluation activities **were conducted** from **May** through to **November** 2011. Test **event with live fire (AFATDS/LW155) occurred in October 2011 and Preliminary Design Acceptance (PDA) documents were completed in November 2011.**

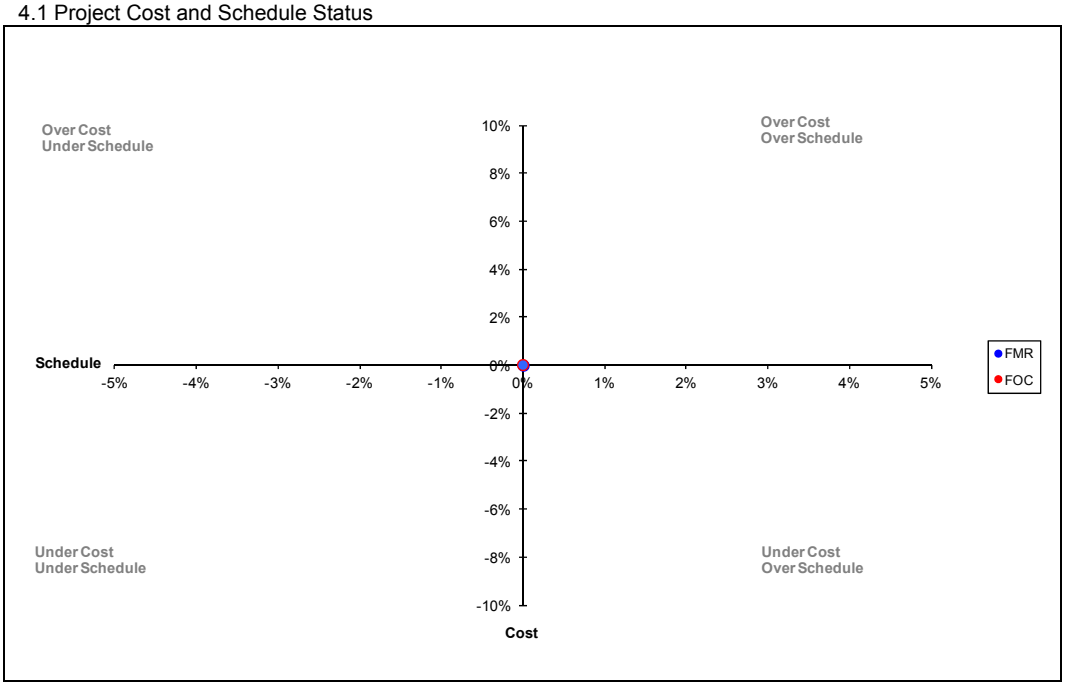
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Nov 11	Nov 11	0	
Initial Operational Capability (IOC)	Dec 11	**Oct 12**	**10**	**The IOC milestone is pending a declaration by the capability manager.**
Final Materiel Release (FMR)	Aug/Sep 13	Aug/Sep 13	0	**The acquisition of CCF is an issue, which is expected to impact the MAA milestones. CCF is not available for acquisition and an acquisition schedule will be established once outcomes of the US Government Fuze Remediation program are known.**
Final Operational Capability (FOC)	Dec 13	Dec 13	0	**The acquisition of CCF is an issue, which is expected to impact the MAA milestones. CCF is not available for acquisition and an acquisition schedule will be established once outcomes of the US Government Fuze Remediation program are known.**



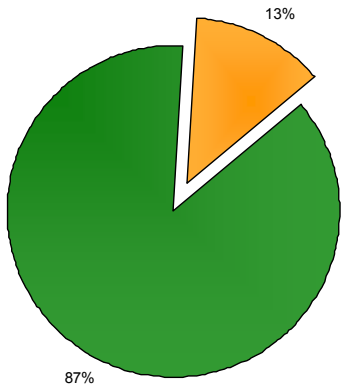
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	**Green:** The Land 17 Phase 1A project forecasts delivery of the LW155 and AFATDS to the required level of capability in accordance with FMR requirements and associated completion criteria outlined in the MAA.
	Amber: **The acquisition of CCF is an issue, which is expected to impact the MAA milestones. The capability will be subject to a further program of testing to resolve reliability issues, prior to the US Government agreeing to a production milestone. Government has been advised of the current status. A decision to progress the acquisition of CCF under this phase of Land 17 will be made by December 2012.** **Land 17 Phase 1A has dependency on JP2085 Phase 1B whose scope includes the integration of AFATDS into vehicles.**
	Red: **N/A**

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
LW155 Configuration Management: There is a chance that configuration management for the M777A2 howitzer will be affected by US configuration changes leading to an impact on supportability and performance.	The Project Office will convene a Configuration Control Board (CCB) to develop strategies for the management of hardware and software upgrades, and enhancements to maintain interoperability with Coalition systems. The CCB will also assess the Block Scale Upgrades of the BMS-F AFATDS to ensure interoperability with DFCS. The Project Office will ensure when the support contract is signed, that the contractor has the ability to upgrade the M777A2 in accordance with the US baseline.
AFATDS System Integration Complexity: It is likely that the complex integration requirements of the BMS-F (C2) with internal Land 17 sub-system elements and external ADF battle management, command and control, and joint offensive support systems will delay IMR and FMR.	The project has engaged multiple DMO and Defence agencies for test and certification activities. This includes the commissioning of the AFATDS Requirements Centre at Puckapunyal and the semi-permanent installation of AFATDS terminals in the Land Network Integration Centre (LNIC) where the first testing activity commenced in May 2011. **This risk has been retired.**
AFATDS - Delivery of Radios: There is a chance that a complete delivery of communications bearers will not occur in time to meet IMR, leading to an impact on performance.	The Project Office has collaborated closely with JP2072 to ensure a timely delivery of the BMS-F (C2) communications bearers. **This risk has been retired.**

AFATDS Vehicle integration not met by FMR date: It is **possible** that a PMV-C mounted BMS-F (C2) **and almost certain that a M113 mounted BMS-F (C2)** capability by the FMR date may not be achieved due to the inability of JP2085 Phase 1B to deliver vehicle integration designs for the PMV-C **and M113** prior to November 2010. JP2085 Phase 1B was to set the conditions for Land 17 Phase 1A vehicle integration activities.	The Project Office engaged multiple stakeholders (DMO projects and Defence agencies including Land Engineering Agency (LEA)) in December 2010 and gained stakeholder endorsement on an integration plan to leverage off the Land 75 vehicle integration work. In collaboration with **Land 75, JP2072 Phase 1 and** Land 116 Bushranger Project, the project has **completed** work to develop **five** Bushmaster PMV-C AFATDS conversion kits utilising the terms and conditions of an extant Bushmaster PMV-C services contract. **The Project Office is dependant upon the completion of L75 Phase 3.4 achieving design acceptance. The Department is managing the remaining scope for those elements that remain a requirement.**
Project Interoperability Scope Boundaries: The complexities of achieving a seamless interface between AFATDS and external ADF systems was not clearly defined when the CDD suite was developed. It is likely that future, as yet unknown, additional activities will need to occur for successful integration into the ADF.	The Project Office is engaging key stakeholders, including Army Headquarters (AHQ) and Capability Development group (CDG), to identify and define the **interoperability** requirements and associated challenges. The project is also assisting key stakeholders with the development of an AFATDS roadmap for the ADF and a higher order Joint Fire Support communications architecture that supports BMS-F in order to identify future interoperability technicalities with other systems as early as possible. **This risk has been retired.**
Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
LW155 There is a chance that the Final Operational Capability (FOC) will be affected by LW155 support arrangements. The US Government has not finalised the long term through life support arrangement for this capability. The endstate ADF through life support arrangement will need to leverage the US industrial base once established.	**The Project Office will maintain an interim support arrangement, monitor the progress of the US DoD toward a long term, through life support arrangement, and maintain sufficient flexibility to access and leverage the contracts and arrangements established.**
AFATDS Configuration Management: There is a chance that FOC shall be affected by the complexities of a configuration management plan with high level of interdependencies on systems outside the boundary of the project or sustainment office.	**The Project Office is developing the Software Development Life Cycle document to guide the development of co-ordinated BMS-F and Joint Fires Systems SOPs. This work is being progressed in coordination with external stakeholders.**
AFATDS – System Integrator Competencies. There is a chance that the FOC will be affected by the lack of in-house systems integration competencies, leading to an impact on FMR date. Although the foundation of System Engineering process is sound, the problem is compounded by the process implementation and corporate culture not suited to capabilities based on IT software and hardware components.	**The Project Office has engaged the services of the external Systems Integrator and provided extensive AFATDS training to the in-house resources at the School of Artillery and main contractor site (Raytheon Network Centric Systems in the U.S.).**

AFATDS Interoperability with other ADF Systems: There is a chance that FMR date will be affected by complex and unclear interoperability requirements with external systems. The problem is compounded by the lack of Army's Joint Fires Functional Concept (JFFC) and appreciation of interdependencies within digitised networks.	**The Project Office has engaged the services of an external Systems Integrator to assist in understanding gaps in JFFC through workshops and requirement analysis.** **The Project Office, to the limit of its control, shall endeavour to discharge its interoperability requirements through engineering test programme and closer engage with stakeholders of "enabling" projects and interdependent agencies.** **Remedial actions by the end of the reporting period have already resulted in better understanding by stakeholders of limitations facing information exchange between tactical and strategic domains.**
LW155 System Engineering Corporate Knowledge: There is a chance that FMR/FOC will be affected by the lack of engineering corporate knowledge and project history due to staff turn over.	**The Project Office has put in place a fast-tracked programme to up skill the incoming System Engineering Manager (SEM). This risk is under the complete Project Office control and the mitigation plan is expected to move the risk to a lower rating in the second half of 2012.**

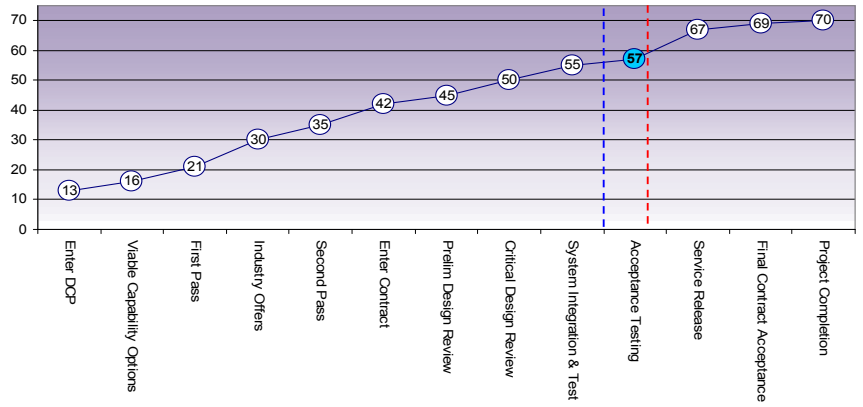
6.2 Major Project Issues

Description	Remedial Action
LW155/AFATDS - Scope change: Land 17 Phase 1A has encountered additional demands to project requirements as a result of: • Changes to the Functional Performance Specification (FPS) and Operational Concept Document (OCD), and • New lower level requirements identified during the Systems Engineering acceptance process.	The project is currently in the processes of reviewing the FPS to adjust the baseline in consultation with AHQ and CDG. The end-state of this work effort will result in an established Verification Cross Reference Matrix (VCRM). **This issue has been retired.**
AFATDS – JP2085 Phase 1B: The inability of JP2085 Phase 1B to deliver AFATDS software, hardware, radios and vehicle integration to set the conditions for the Land 17 Phase 1A AFATDS upgrade has brought additional schedule risk to the project.	A process is currently being undertaken to **manage the interdependency between** JP2085 Phase 1B to Land 17 Phase 1A and determine the appropriate schedule **and workforce** adjustments.
CCF – Schedule: The US Government has been unable to offer the CCF for acquisition via FMS due to ongoing testing and certification of the fuze accuracy and reliability. The US Government advised in February 2011 that a production milestone decision for the CCF will not be made until December 2012.	The project is planning to have CCF work packages scheduled, resourced and ready to commit once the CCF is approved by the US Government for sale through FMS. An Options Plan is in place to move the CCF scope to alternate phases of Land 17 if the delay exceeds the scheduled life of Phase 1A.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	8	**9**	8	8	8	8	8	**57**
Acceptance Testing	Project Status	9	10	**9**	7	7	8	**8**	**58**
	Explanation	• **Schedule:** Critical Path activities are being managed in accordance with DMO policy and guidelines. Current schedule sees the major milestones of IMR and FMR being met. • **Cost:** Projects remain within the budget allocated by Government at Second Pass approval. • **Requirement: Project Requirements are well understood, and were confirmed at the second SRR.** • **Technical Understanding:** Due to the train the trainer courses and ongoing collaboration with the US Government the level of technical understanding within the Project is high. • **Technical Difficulty:** As system integrator Land 17 Phase 1A has commenced desktop analysis and verification of integration and interoperability between the individual component systems. An interoperability test plan has also been drafted.							



2010-11 DMO MPR Status - - - - 2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Collaboration with key stakeholders required – As the project progressed, the technical understanding of the project office increased faster than that of the external stakeholders and this has required a pro-active management approach to ensure a common understanding.	Governance Requirements Management
Network Centric Warfare – while representing a clear intent for ADF future war fighting, NCW is a relatively new and evolving concept. As NCW evolves it imposes demands for projects as a result of incremental changes to organisational understanding, standards, and operating methods. The experience underlines the importance for the project of having well-defined and stable requirements.	Requirements Management
Foreign Military Sales – When pursuing an FMS contract with the US Government it is important to factor in schedule contingency.	Schedule Management

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	MAJGEN Grant Cavenagh
Branch Head	BRIG David Shields
SPO Director	COL Michael Chadwick
Program Director Land 17	Mr Adrian Ford
Project Manager Land 17 Phase 1A	LTCOL John Dougall

Project Data Summary Sheet[259]

Project Name	**BATTLEFIELD COMMAND SUPPORT SYSTEM**
Project Number	**LAND 75 Phase 3.4**
Capability Type	New
Service	Australian Army
Government 1st Pass Approval	Dec 05
Government 2nd Pass Approval	Nov 09
Total Approved Budget (Current)	**$305.8m**
2011-12 Budget	**$61.0m**
Project Stage	**System Integration and Test**
Complexity	ACAT II

Section 1 – Project Summary

1.1 Project Description

The LAND 75 Phase 3.4 Battlefield Command Support System (BCSS) project will provide a digital command and control support system to enhance combat capability of the Australian Army through supporting timely and quality decision-making in the land tactical environment. The BCSS project will also deliver Battle Management Systems (BMS) to **a significant number of field vehicles** including; Bushmaster Protected Mobility Vehicles (PMV), G-Wagons, Macks and Unimogs. The BMS is a computer-based command and control system designed to enhance the tactical commanders' Situational Awareness and ability to execute operations. The BMS consists of software that is simple and intuitive to use and hardware that can survive in the land tactical [combat] environment.

The BMS is the central component of the Battle Group and Below Command, Control and Communications System (BGC3) that is being jointly delivered by the LAND 75 Phase 3.4, LAND125 Phase 3A and JP 2072 Phase 1 projects, and will incorporate a mobile, data capable communications system and be able to exchange combat information with BCSS and other **Land** BMS. The BGC3 will form the basis of a land combat identification (Blue Force Tracking) system by providing commanders with a 'real-time' Situational Awareness display of friendly force locations.

1.2 Current Status

Cost Performance

As at 30 June 2012, project LAND 75 Phase 3.4 has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

Schedule Performance

Initial Materiel Release (IMR) was achieved on 14 June 2011 and the Initial Operating Capability (IOC) was declared by the Chief of Army as the Capability Manager on 20 April 2012. As at 30 June 2012, the project has installed the BGC3 into approximately 100 Protected Mobility Vehicles (PMV), and

[259] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

progressed the installation design for the Mack and Unimog to Physical Configuration Audit in preparation for production.

In December 2011, the Prime Minister agreed to align the LAND 75 Phase 3.4 Final Operational Capability (FOC) with Army's Brigade rotation cycle circa December 2013. The approval was linked to a Basis of Provisioning (BOP) change sought by Army. The DMO is to negotiate this with Elbit Systems and ensure that all changes are affordable within approved project funding.

Materiel Capability Performance

The system has achieved IOC following a longer than planned period of Operational Test and Evaluation (OT&E) which was led by the Australian Defence Test and Evaluation Office, and supported by the Defence Science and Technology Organisation. Army has accepted approximately 100 PMV installations as at 30 June 2012.

1.3 Project Context

Project	Explanation
Background	The capability need was identified in 2002-03 by Capability Development Group (CDG) and the Land Warfare Development Centre. The need arose from analysis of operational experience through the use of BCSS, regional threat and technology assessments, and support from allied programs and technology growth. The capability was refined from 2003 to 2005 culminating in the submission for first pass approval in late 2005. The duration of time from concept to contract has allowed the Australian Defence Force (ADF) to capitalise upon generational advancements in technology and support the alignment of complementary projects to deliver a holistic solution. The project received Government first pass approval in December 2005. In June 2006, the Minister for Defence agreed that the solicitation of the LAND 75 Phase 3.4 BMS and the LAND 125 Phase 3 C4I sub-system was to be combined to enable Defence to obtain a fully integrated system for mounted and dismounted battle management. The communications bearer (originally to be provided separately by the JP2072 project) for the mounted BMS was added in January 2007. Combining the Request For Tender (RFT) enabled Defence to seek a coherent and integrated solution from industry. The BGC3 RFT closed on the 27 August 2007, with tenders received from four companies. The initial down selection was to two preferred tenders in January 2008. Phase 1 of the Offer Definition Activity (ODA) selected Elbit Systems Ltd (Elbit) as the preferred tender to proceed to Phase 2 of ODA in May 2008. Elbit successfully completed the ODA and provided a refined risk, schedule and cost proposal that constituted the basis of the approval proposal. Government second pass approval was gained in November 2009, with the contract being awarded to Elbit as the prime contractor in March 2010.
Uniqueness	The capability introduced by this project will fundamentally change the methods used by tactical forces in the implementation and collaborative distribution of battlefield data. Command and Control processes will move from analogue, hard copy based information distribution to an electronic, near-real time capability with improved situational awareness. Implementation of this capability is considered a conversion rather than simply a rollout for the ADF, as it introduces a significant number of organisational and personnel change management requirements.
Major Challenges	There is a significant Government Furnished Equipment (GFE) component to this project and its management poses a challenge as the Commonwealth works to accommodate the GFE requirements of Elbit Systems. The type of GFE ranges from systems that can only be sourced through the United States (US) Government and hence subject to International Traffic in Arms Regulations (ITAR), and Australian Defence Force (ADF) controlled assets, including **soldier equipment** and vehicle platforms. Meeting the design approval requirements continues to remain a challenge for the program as the project is exposed to multiple platform design authorities **that** creates a complex management environment. Melding of the processes required to achieve an approved design continue to consume a large portion of the projects management and engineering resources. The majority of the components in the BMS are off the shelf, as are many of the external systems to which the system is to integrate. Managing the interfaces to ensure that the system specifications can be achieved remains a key challenge.

	In the 2012-13 Federal Budget, the Government decided to remove installation of the BGC3 into the M113AS4 Family of Vehicles and apply a real cost decrease of $7m. This will require a Contract Change Proposal, which will be combined with the previous Basis of Provisioning and FOC schedule change sought by Army, which has already been approved in principle by the Prime Minister in December 2011. These contract changes, including changes to the FOC schedule, when finalised later in 2012 will establish the new Contract Baseline.
Other Current Projects/Sub-Projects	**LAND 75 Phases 3.2, 3.3 and 3.3B BCSS**: A digital command post system used for deliberate planning, operational monitoring, controlling and reviewing functions. The BCSS will provide the higher level command and control processes to complement and inform the lower tactical information generated from the BMS.

1.4 Linked Projects

Project	Description of Project	Description of Dependency
JP 2072 Phase 1 Battlespace Communications System	This is a project to enhance communications for ADF land elements through the development of an holistic battlespace communications architecture for the land environment.	Communications radio solution and architectures that underpin the BGC3.
LAND 125 Phase 3A Soldier Combat System	This project will enhance communications for ADF soldiers through the development of a BMS Dismounted component.	LAND 125 Phase 3A C4I sub-system will enable the ADF to streamline delivery of an integrated system for mounted and dismounted battle management.
JP 5408 phase 2B Navigation Warfare	This project will incrementally implement the enhancements and replacements to the ADF's GPS equipment.	These navigational and timing GPS equipment form an integral component of the BGC3.
LAND 116 Phase 3 Bushranger	This project is providing protected land mobility to Army units and RAAF Airfield Defence Guards with the Bushmaster PMVs.	The Bushmaster PMV is one of the vehicle platforms identified for installation of the BMS. This is the highest priority vehicle for LAND 75 Phase 3.4 project
LAND 121 Phase 3**A** Overlander	This project will acquire **approximately** 1,200 unprotected lightweight/light vehicles **(G-Wagons).**	The G-Wagon (lightweight/light vehicle) is one of the vehicle platforms identified for installation of the BMS. **LAND 121 have already designed the mechanical installation of the BGC3 into the G-Wagon, and will fit the entire fleet of G-Wagons with principal mountings and fixtures. 388 G-Wagons from the total fleet are to be fitted with the BGC3. Every G-Wagon is to be delivered by LAND 121 fitted for the BGC3.**
LAND 17 Phase 1B BMS-Fires and AFATDS	This project will deliver an enhanced indirect fire support system.	The BMS-Fires system of the 105mm Hammel Artillery Replacement and 155m Howitzer Artillery Replacement will need to exchange data with the BMS being acquired by the LAND 75 Phase 3.4 project. **LAND 17 has already designed and is delivering a kit to replace a portion of the BMS with the BMS-Fires terminal. LAND 17 BMS-Fires kit requires that any PMV they are fitting has first been fitted by LAND 75.**

LAND 112 – ASLAV (all phases)	**This project is delivering enhancements to the existing fleet of Australian Light Armoured Vehicles (ASLAV).**	**The BGC3 remains an option under contract in Phase 3.4. This option has not been activated and remains out of scope, however, it may be utilised in support of either LAND 112 or LAND 75 Phase 4 to network these vehicles.**

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
Dec 05	Original Approved		7.9	1
Nov 09	**Government Second Pass Approval**	325.0		
Jun 12	**Real Variation – Scope**	**(7.0)**		
			318.0	
Jul 10	Price Indexation		15.6	**2**
Jun 12	Exchange Variation		**(35.7)**	
Jun 12	**Total Budget**		**305.8**	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure – Elbit Systems Limited	**(72.2)**		
	Other Contract Payments / Internal Expenses	**(10.7)**		**3**
			(82.9)	
FY to Jun 12	Contract Expenditure – Elbit Systems Limited	**(37.3)**		
	Contract Expenditure – **Northrop Grumman**	**(4.9)**		
	Other Contract Payments / Internal Expenses	**(6.6)**		**4**
			(48.8)	
Jun 12	**Total Expenditure**		**(131.7)**	
Jun 12	**Remaining Budget**		**174.1**	

Notes	
1	This project's original DMO budget amount is that prior to achieving Second Pass Government approval.
2	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was $8.3m. In addition to this amount, the impact on the project budget as a result of out-turning was a further $7.3m having been applied to the remaining life of the project.
3	**Other expenditure comprises: Operating Expenditure ($3.6m), Offer Definition ($3.0m), Consultants ($3.3m), Contractor Support ($0.6m) and Minor Capital ($0.4m) expenditure not attributable to the Prime contract.**
4	**Other expenditure comprises: Operating Expenditure ($0.6m), Consultants ($0.3m), Contractor Support ($5.7m) and Minor Capital ($0.1m) expenditure not attributable to the Prime contract.**

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
			FMS	**The variation is due to the delay of Milestone and Escalation payments for the Delta Detailed Design Review, delays in the finalisation and agreement of a number of Contracts/CCP.**
		(12.2)	Overseas Industry	
			Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
			Commonwealth Delays	
61.0	**48.8**	**(12.2)**	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
Elbit Systems Limited	15 Mar 10	176.2	176.2	Variable	ASDEFCON	1
Northrop Grumman	**24 Jun 11**	**10.3**	**10.3**	**Fixed Price**	**ASDEFCON**	

Notes

1	This value represents the LAND 75 Phase 3.4 aspect of a contract which covers two other discrete projects. Total contract value is $275.7m, this includes both Acquisition and Sustainment.

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
Elbit Systems Ltd	Various	Various	Delivery of BMS installations or installation kits for: - Mack Truck: 131 - Unimog Truck: 225 - Bushranger PMV: 193 - G-Wagons: 388	
Northrop Grumman	**Various**	**Various**	**Software Licences**	

Major equipment received and quantities to 30 Jun 12

Most Critical/Detailed Design Reviews have been completed. **As at 30 June 2012, the project has installed the BGC3 into approximately 100 Protected Mobility Vehicles (PMV).**

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	System Design Review - BMS	May 10	N/A	Aug 10	3	1
Preliminary Design	Group 1 – **Selected Variants of PMV, Mack and Unimog**	Sep 10	N/A	Sep 10	0	
	BMS	Aug 10	N/A	Sep 10	1	2
	Preliminary Design Review – **Group 2 & 3 Remaining Variants of PMV, Mack and Unimog**	Aug 11	N/A	**Aug 12**	**12**	3
Detailed Design	Group 1 – **Selected Variants of PMV, Mack and Unimog**	Dec 10	N/A	Jan 11	1	**4**
	BMS	Dec 10	N/A	Jan 11	1	
	Delta DDR – Group 1 PMV only	Dec 11	N/A	**Aug 12**	**8**	**5**

	Group 2 – **Remaining Variants of PMV, Mack and Unimog**	Nov 11	N/A	**Nov 12**	**12**	**6**

Notes	
1	The System Design Review was achieved when all major action items resulting from the review were completed, and the progress certificate was issued.
2	System Preliminary Design Review was delayed to align with the conduct of the Dismounted and Group 1 reviews.
3	**Preliminary Design Review (PDR) was delayed due to Protected Mobility Command Vehicle (PMCV) production being reprioritised by Army in order to provide a coherent capability to the customer. Design activities relating to installation of the Battle Management System into the M113AS4 remains part of Group 3 design reviews.**
4	**The delta Detailed Design Reviews (dDDR) were aligned to incorporate the conduct of dismounted human factors trials and the dismounted design review, and significant input from Thales in its role of the vehicle Original Equipment Manufacturer (OEM) and Design Authority. The delay is subject to the finalisation of a major contract change proposal (CCP) for the design schedule which is being negotiated.**
5	**Due to new requirements placed on the vehicle by OEM the contractor has yet to meet the required scope of the dDDR. A change to the dates of dDDR are incorporated in the BOP change CCP negotiations.**
6	**Installation of BGC3 into Group 3 (M113AS4 Family of Vehicles) has been removed from scope by the Government as part of the FY 2012-13 Federal Budget, and a real cost decrease was applied in the Budget Portfolio Budget Statements. As such the Group 2 & 3 vehicle delivery milestones now apply only to Group 2. The BOP change CCP resulted in the reduction of vehicles and a de-scoping of the design review, and will be concluded in FY 2012-13. There is only one vehicle remaining from the Group 2 PMV variants, PMV-Ambulance and its PDR will be considered at the Group 1 dDDR. Other Group 2 PMV, Mack and Unimog vehicle installation designs will be based on the Group 1 designs.**

3.2 Contractor Test and Evaluation Progress

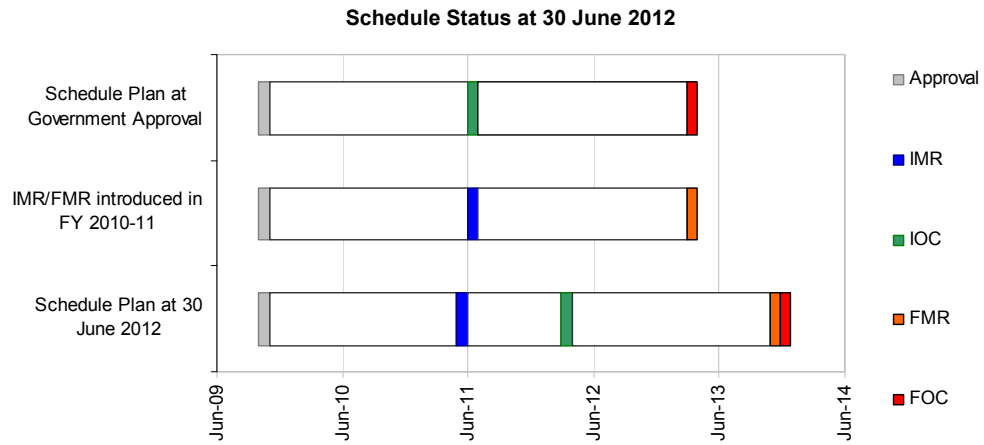
Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	VMF Conformance to standard testing	Jun 11	N/A	**Oct 12**	**16**	1
	Communications	May - Oct 10	N/A	**Oct 12**	**24**	**2**
Acceptance	Acceptance Test and Evaluation – Command Post – Man Portable (CP-MP)	Apr - Jun 11	N/A	**Oct 12**	**16**	**3**
	Acceptance Test and Evaluation - Group 1 Various Vehicles	Apr - Jun 11	N/A	**April 13**	**22**	**4**
	Acceptance Test and Evaluation – Group 2 **PMV Ambulance**	Feb 12	N/A	**April 13**	**14**	**5**

Notes	
1	**The first set of Variable Message Format (VMF) messages was completed June 2011, allowing demonstration of the interoperability element with other ADF systems. Remaining messages conformance testing (CTS#4) is complete and awaiting its report (07 July 2012) with some regression testing required later in 2012. Final ADF Tactical Data Link (TDL) Authority (ADFTA) testing is scheduled for October 2012, but this does not yet affect the system First Article Factory Test (FAFT).**
2	**Initial communications developmental testing was related to communication performance of individual radios by radio OEMs (as delivered by the sister project JP 2072 Phase 1). Acceptance testing is platform related and is conducted on each new design to address the interdependencies, such as antenna collocation.**

3	**System modifications by the contractor in order to meet the requirements under the contract have resulted in the need for regression testing. This is now planned for October 2012 but does not affect the cardinal milestones.**
4	**Final testing schedules for Group 1 variants are planned for September 2012. Delays are due to the need for the contractor to redesign elements to improve human factors compliance and mine blast conformance. This testing is now scheduled for April 2013 and can be accommodated in the adjusted cardinal milestones.**
5	**Testing has been conducted for some variants (Mog, Mack and PMV) due to the 'commonality of design.' PMV-Ambulance does not share a common design with the other PMV variants. Due to delays in obtaining a vehicle for design purposes, the design process is incomplete for PMV-Ambulance, and will be progressed with Thales as the Design Authority in FY 2012-13.**

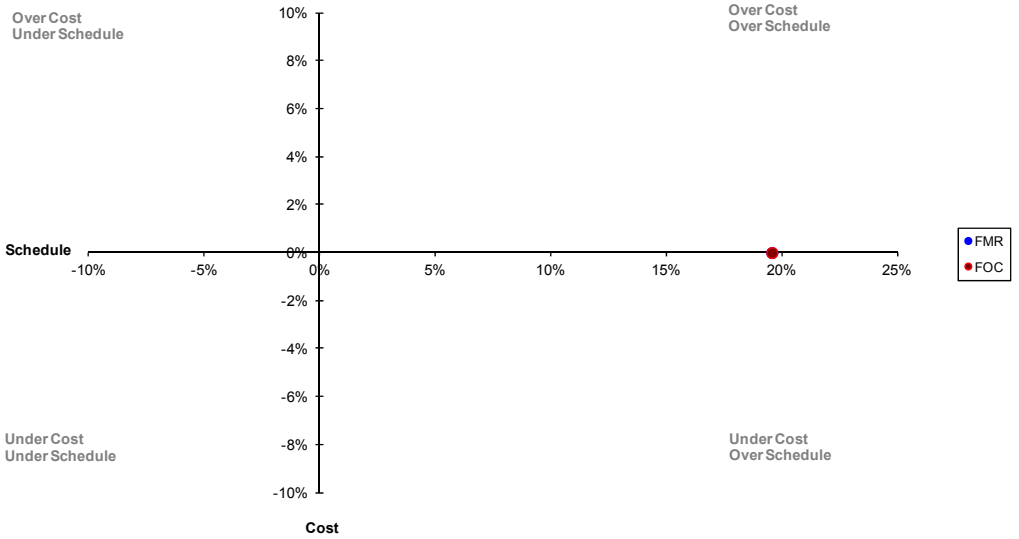
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Jul 11	Jun 11	(1)	N/A
Initial Operational Capability (IOC)	Jul 11	**Apr 12**	**9**	**Longer than expected Operational Test and Evaluation (OT&E) Activities were required to fully explore risk areas of interest to Army and Defence Science and Technology Organisation. The initial round of OT&E activities in 2011 following Exercise TALISMAN SABRE 2011 were inconclusive.**
Final Materiel Release (FMR)	Apr 13	**Dec 13**	**8**	**Dates moved to better align with the Army Brigade Rotation Cycle.**
Final Operational Capability (FOC)	Apr 13	**Dec 13**	**8**	**Dates moved to better align with the Army Brigade Rotation Cycle.**



Section 4 – Project Cost and Schedule Status

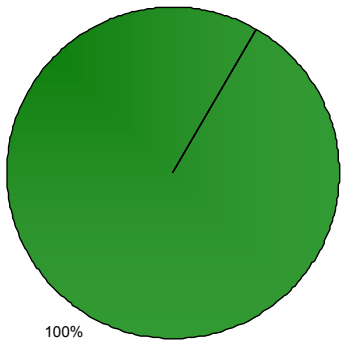
4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance



Green:

The project is currently meeting capability requirements as expressed in the Material Acquisition Agreement and supporting suite of capability definition documentation, although the schedule risk of achieving full compliance to the technical regulatory authorities requirements, especially for the Bushmaster is rated as medium.

Amber:

N/A

Red:

N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that contractor performance and achievement of contractual obligations will not be met as a result of the contractor's developing experience in areas when working with Defence (contract and engineering processes, deliverables, culturally) and as such some deliverables are below standard.	**Continual mentoring of the contractor in understanding the Australian marketplace, and way that Defence organisations operate.** **Seek to create the circumstances for early engagement with the Platform OEM.**
There is a risk that the RAAF/Army are unavailable to support the Projects commitments due to known and unknown theatre commitments for Units. Subsequently the Government Furnished Materiel will be unavailable for scheduled activities.	**Adjust the schedule to better align with Force Rotation Schedules. Government notified of change to schedule in December 2011 with FOC Q4 2013.** **Early and sustained engagement with the Platform fleet managers to ensure vehicle rotation plan supports the L200 program as well as Army's needs.**
There is a risk Army changes its Operational Concept which results in changes in scope for LAND75. User acceptance of the system is also a risk if these changes are delivered late in the Program.	**Extract from the Materiel Acquisition Agreement (MAA) addresses this risk: "Should the parties agree that ambiguity exists between the requirements of the capability baseline endorsed by the PMSG [Project Management Steering Group], specifically the FPS DEF(AUST) 8274 and the Operational and Support Concept [OSC] and the BGC3 Systems Specification and Support Systems Specification (the Specification) then it is agreed that the Specification will take precedence over the capability baseline for the issue or issues identified". The test to enact this clause is that the PMSG agrees that ambiguity exists.** **If further changes were sought, then a change to the Government approval to allow sufficient time to implement the changes would probably be required.**
There is a risk that the BGC3 system will not achieve full information and communications technology (ICT) Accreditation.	**Accreditation only affects operations of other systems that integrate to the BMS (ie: other Programs) as closed system can develop and deliver without accreditation. Issue becomes major if no ICTA at Final Acceptance as this is a condition of contract. The original 12 month Provisional ICT Accreditation (PICTA) has expired, although a waiver is being sought to cover the period until the ICTA.**
There is a risk that ESL will not gain approval to progress to the Training Readiness Review Stage (TNGRR) due to the Training Needs Analysis Report (TNAR) and training packages not being developed to the required standard. This would lead to a delay in the TNGRR date.	Support ESL in the production of the TNAR and Course Packs to meet schedule deliverables. Engage ESL and Army to ensure deliver against schedule dates. **This risk has been retired, as Army is currently satisfied with the introduction into service training course packs.**

There is an integration risk in relation to fitting the Dismounted Battle Management System (BMS-D) in to the Modular Combat Body Armour System (MCBAS) and/or its replacement Tiered Body Armour System (TBAS).	The project will maintain regular contact with ISSD to ascertain design changes to TBAS and to advise of changes that may need to be made to TBAS in order to fit the BMS-D. **This risk has been reassessed by the project and is now rated as moderate/low risk.**
There is a risk that the Defence Advanced GPS Receiver (DAGR) data and power cable are not suitable for operational use with the BCSS.	The project is working closely with ESL to investigate options for resolving the security of the data cable. **This risk has been retired.**
Failure to achieve user acceptance of the BMS-D would present a schedule risk.	The project will consult with end user stakeholders to ensure appropriate configuration baselines are established and to ensure adherence to communications architectures. **This risk has been reassessed by the project and is now rated as moderate/low risk.**
There is a high risk that terrain representation software will misrepresent actual terrain and entity position.	Ensure end users are familiar with software and related conversion procedures during release and training in the use of map conversion software. **This risk has been retired.**
There is a chance that vehicles delivered to the Meeandah facility do not meet the minimum level of acceptance criteria in the Quality Plan. This would force those vehicles to be removed from the production sequence while issues are rectified, causing a production throughput less than contractually required, with the potential for ESL to submit claims for postponement (and costs) and the extension of achievement of FOC.	The project will pro-actively work to ensure that all vehicles presented for production meet the Quality Plan acceptance criteria. For vehicles that do not meet these criteria, a remediation process will be instigated with checks in place for installation. **This risk has been reassessed by the project and is now rated as moderate/low risk.**
There is a chance that ADF personnel will not be available to support achievement of IMR MR due to an increase in ADF operational requirements.	The **project** is continually liaising with Army Headquarters (AHQ) to ensure availability sufficient personnel numbers. **This risk has been retired.**

Note
There have been significant changes to the Risk and Issues section as a result of the review of the Project's risk management processes and the transition to PREDICT software as its risk management tool. A number of last year's risks have been rolled up into new strategic risks in this year's PDSS, while others have been re-assessed or retired.

Emergent Risks (risk not previously identified but has emerged during 2011-2012	
Description	Remedial Action
N/A	N/A

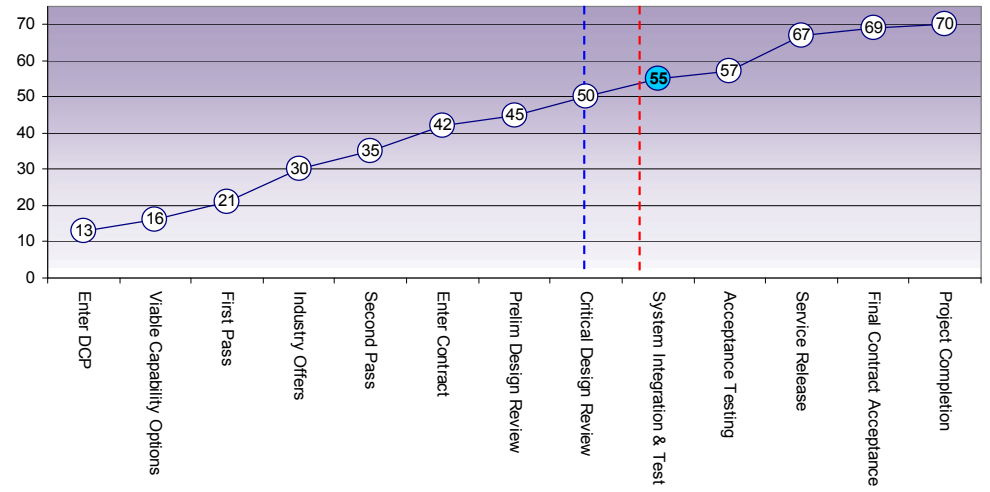
6.2 Major Project Issues

Description	Remedial Action
Detailed Design Review (DDR) has not been met for the BGC3 system for the PMV due to scope changes to the baseline of the PMV impacting the requirements and subsequent baseline of the BGC3. The vehicle baseline is dynamic with competing projects installing capability in to the vehicles concurrently.	**A February 2011 Gate Review agreed that the L200 program will deliver most, if not all PMV installations to Army at preliminary design baseline. Once the design baseline has been finalised, and a design acceptance certificate has been issued by Thales (DA), any deltas between the final design and that delivered will be identified. If Army accepts the design, then no further action is required. If there are differences that are unacceptable, then a retrofit program will be required which will be planned in the acquisition phase of Land 75 Phase 3.4, with implementation split between acquisition and sustainment under the Sustainment Product Schedule.**
In the FY 2012-13 Federal Budget, the Government decided to remove installation of the BGC3 into the M113AS4 family of vehicles. A Real Cost Decrease has already been applied to Land 75 Phase 3.4 in the Portfolio Budget Statements and incorporated in the BOP change CCP negotiations.	**Include the M113AS4 Family of Vehicles in the already planned BOP CCP discussions.** **Work with Capability Development Group and Capability Managers to re-baseline the Program.**
Several key staff left the Project Office which was not adequately manned to support the execution of the contract. The rapid expansion of the workforce resulted in steep learning curves for the new staff, leading to a subsequent backlog of work that is still being resolved.	**Track CoA response times to the contractor, and take corrective action if particular areas are lagging.** **Well-being plans, and staff rotations within the project to provide diversity of work, travel and reporting obligations.** **Recruitment of vacant positions still underway.**
MILIS Requirements may mean that vehicles can't be issued back to ESL for retrofits.	Survey and Quote for the setup of LAND 200 MILIS program to enhance tracking of vehicle availability. **This issue has been retired as the contractor, Elbit, is now treating this risk via the Survey and Quote.**

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	Total
Project Stage	Benchmark	**8**	7	**8**	8	**8**	**8**	**8**	**55**
System Integration and Test	Project Status	**8**	7	8	**8**	**8**	7	**8**	**54**
	Explanation	• **Commercial: The contractor has implemented suitable risk management and Earned Value Management arrangements. The contract is generally well managed; and in most cases is performing and delivering as contracted.**							



2010-11 DMO MPR Status - - - - 2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
For Network Centric Warfare projects that have many interfaces and stakeholders, it is essential to have the requirements not only well understood, but to have these very well defined in the suite of Second Pass project approval documentation. This provided a solid foundation to build an executable contract, **and helps guide stakeholder projects who are seeking interoperability with the BGC3.**	Requirements Management
The project has refurbished an existing facility to create a first of type installation facility. The key lesson is to have a sufficient reserve of space to accommodate growth in first of type integration requirements. Having this facility where stakeholders can view progress has been invaluable.	First of Type equipment
The project has a well defined contract with clear conditions of contract that provide flexibility where it is needed. In particular, parties to the contract can agree to changes to the Government Furnished Material (GFM) by accession rather than via a formal contract change proposal, which allows far greater agility in the management of GFM and GFE requirements.	Contract Management
It is essential to ensure an adequate level of resourcing for the management of tender preparations and evaluations through a risk management based approach. This approach would have greatly assisted the project as it experienced a significant and unexpected increase to the workload.	Resourcing
During the course of the program, it was found to be essential to continue with an expanded Integrated Project Team (IPT) which had senior stakeholder representation of all groups involved, including projects delivering the platforms, technical regulatory agencies and the Capability Managers.	Governance
Considering the many stakeholder interfaces involved in the Network Centric Warfare (NCW) programs (which this project is but one), the traditional Project Management Stakeholder Group (PMSG) forum was found to be insufficient and requiring a broader NCW program focus. As a result, higher level program management oversight, which involves all key stakeholder groups, including the Capability Manager, Capability Development Group and the DMO, has proven to be an essential management forum for the project.	Governance

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	Mr Michael Aylward
Branch Head	Mr Brad Flux
Project Director	**Mr** Roger Grose
Project Manager	**Mr Roger Grose (to Aug 11)** **LTCOL Geoffrey Donkin (Sep 11–current)**

Project Data Summary Sheets

Project Data Summary Sheet[260]

Project Name	**COUNTER - ROCKET, ARTILLERY AND MORTAR**
Project Number	**LAND 19 Phase 7A**
Capability Type	New
Service	Australian Army
Government 1st Pass Approval	Apr 10
Government 2nd Pass Approval	Apr 10
Total Approved Budget (Current)	$251.4m
2011-12 Budget	$51.6m
Project Stage	System Integration & Test
Complexity	ACAT III

Section 1 – Project Summary

1.1 Project Description

The project seeks to deliver a Counter - Rocket Artillery and Mortar (C-RAM) Sense and Warn (S&W) capability, including Giraffe Agile Multi Beam (GAMB) radars and United States (US) C-RAM Command and Control (C2) equipment, for deployment to Afghanistan.

C-RAM S&W is designed to increase the level of force protection for deployed forces, providing early detection and warning against enemy indirect fire threats. The ability to provide early detection and warning of enemy indirect fire activity will afford friendly troops deployed in forward operating areas the time to take appropriate response measures, resulting in increased survivability.

1.2 Current Status

Cost Performance

As at 30 June 2012, project LAND 19 Phase 7A has reviewed the project's approved scope and budget for those elements required to be delivered by the DMO. Having reviewed the current, financial, contractual obligations of the DMO for this project, current known risks and estimated future expenditure, the DMO considers, as at the reporting date, there is sufficient budget remaining for the project to complete against the agreed scope.

[260] Notice to reader

Future dates and Sections: 1.2 (Project Financial Assurance Statement); 1.3 (Major Challenges), 5.1 (Measures of Materiel Capability Performance), 6.1 (Major Project Risks) and 6.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the Auditor-General's Independent Review Report at p. 181.

Schedule Performance

Achieved milestones to date:

- Initial Materiel Release (IMR), October 2010;
- Initial Deployment Capability (IDC), December 2010;
- Initial Operational Capability – Tarin Kot, December 2010; and
- Initial Operational Capability – Uruzgan, July 2011.

The project is on track to deliver a C-RAM S&W capability (encompassing 3 x GAMB platforms and associated C-RAM C2 elements) of the Mission System to achieve Final Materiel Release (FMR), December 2012 – January 2013. Completing 85.3% of estimated investment spends with the remaining 14.7% scheduled to be completed by Materiel Acquisition Agreement (MAA) closure forecasted for June 2013. The project has recently been directed to introduce the capability into service which will impact on project closure.

In September 2011, the Chief of Defence Force (CDF) agreed that Initial Operational Capability - Uruzgan had been achieved with the Minister for Defence noting this achievement.

The level of engagement with the Project Sponsor (Capability Development Group), paved the way' to enable the project office to work efficiently through the many processes to establish an operational capability in eight months.

Materiel Capability Performance

The C-RAM capability is currently operational throughout Uruzgan province in Afghanistan. The installed C-RAM capability in Afghanistan is providing effective S&W performance.

1.3 Project Context

Project	Explanation
Background	In September 2009, the Australian Government directed the Australian Defence Force (ADF) to immediately prepare a C-RAM S&W capability for deployment to Afghanistan. The ADF's intent was to deploy the C-RAM S&W capability to Uruzgan Province. The C-RAM system has been mandated to consist of two distinct sub-systems – the GAMB radar sensor to be acquired through a sole-sourcing arrangement with Saab, Electronic Defence Systems (Saab) and a C-RAM C2 S&W sub-system to be acquired through the FMS process with the US Government. The contracts were signed in April 2010 and the capability was installed and operational in the Uruzgan Province by December 2010. The rollout continued throughout 2011 to establish a series of patrol bases to support the ADF effort. Working to an aggressive schedule, the many achievements have been attributed to the high profile of the project, in particular, the media interest and recognition by the wider project community. With further direction from the Chief of Army and agreement from the Minister for Defence, the project is currently assessing the requirement to introduce the C-RAM capability into service.
Uniqueness	C-RAM S&W System is a combination of an FMS, Military 'off the shelf' acquisition and commercial contract. At the time this unique combination of mission system elements made it the first of its kind in the ADF. There have since been a number of similar projects. The establishment of the capability with the Air Land Regiment requires specialist skills to operate the equipment as it is not considered a like capability to other radars in the ADF.
Major Challenges	Introduction Into Service Activities: The Australian Army has identified the need to transition the capability from Operational 'in use' to an 'In Service' capability. The major challenges facing the DMO Project Office in this coming year are the resources required with the relevant skill sets to undertake the work and intensive stakeholder engagement to manage this within the current agreed project timeline. In addition to this, supportability in Australia is yet to be established. Of the many considerations of how the C-RAM S&W System is to be retained and maintained, a local support framework and structure has not been defined due to resource and trade skill constraints. Supplier considerations: As all extant C-RAM equipment suppliers are based overseas, there has been no real opportunity for local industry involvement in the C-RAM acquisition contracts. However, there are now likely to be opportunities for Australian Industry for Through Life Support of the C-RAM S&W systems.

Other Current Projects/Sub-Projects	N/A

1.4 Linked Projects

Project	Description of Project	Description of Dependency
N/A	N/A	N/A

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	Current $m		Notes
	Project Budget			
May 10	Original Approved		265.6	
Jul 10	Price Indexation		5.4	1
Jun 12	Exchange Variation		(19.6)	
Jun 12	**Total Budget**		251.4	
	Project Expenditure			
Prior to Jul 11	Contract Expenditure − US Government (AT-B-UDU)	(31.3)		
	Contract Expenditure − Saab - Lease	(17.0)		
	Contract Expenditure − Saab - Acquisition	(44.5)		
	Other Contract Payments / Internal Expenses	(2.7)		
			(95.5)	
FY to Jun 12	Contract Expenditure − US Government (AT-B-UDU)	(16.8)		
	Contract Expenditure − Saab - Lease	(17.2)		
	Contract Expenditure − Saab - Acquisition	(16.1)		
	Other Contract Payments / Internal Expenses	(1.5)		
			(51.6)	
Jun 12	**Total Expenditure**		(147.1)	
Jun 12	**Remaining Budget**		104.3	

Notes	
1	Up until July 2010, indexation was applied to project budgets on a periodic basis. The impact on the project budget as a result of out-turning was $5.4m having been applied to the remaining life of the project.

2.2 In-year Budget Expenditure Variance

Estimate $m	Actual $m	Variance $m	Variance Factor	Explanation
		0.8	FMS	The variance is mainly attributed to FMS payments of $0.8m brought forward and foreign exchange variation of $0.7m. This increase has been mainly offset by cost savings of ($1.4m) and rescheduling of minor project management expenses of ($0.1m).
			Overseas Industry	
			Local Industry	
			Brought Forward	
		(1.4)	Cost Savings	
		0.7	FOREX Variation	
		(0.1)	Commonwealth Delays	
51.6	51.6	0.0	**Total Variance**	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price (Base) at		Type (Price Basis)	Form of Contract	Notes
		Signature $m	30 Jun 12 $m			
Saab GAMB 740 Lease	Jun 10	32.4	45.2	Firm	MODIFIED ASDEFCON	
Saab GAMB Acquisition	Dec 10	86.2	89.9	Firm	ASDEFCON	
US Government AT-B-UDU	Apr 10	71.2	102.5	FMS	FMS	

Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 12		
Saab GAMB 740 Lease	1	2	Re-manufacture and lease of two GAMB 740 Radar Systems, contracted logistic support and Field Service Representatives.	
Saab GAMB Acquisition	3	3	Manufacture of the GAMB Radar Systems, contracted logistic support and Field Service Representatives, and Giraffe Training Systems.	
US Government AT-B-UDU	Various	Various	FMS Military off the shelf procurement includes the provision of supplies (supporting technical and engineering documentation), initial spares and support services in an operational environment. Consisting of: ▪ Lightweight Counter Mortar Radar (LCMR) x 31; ▪ Wireless Audio Visual Emergency System (WAVES) x 2 sets; ▪ Forward Area Air Defense Command and Control (FAAD C2) x 25; ▪ Air and Missile Defense Workstation (AMDWS) x 25; ▪ C-NET Local Area Network System x 2 sets; and ▪ Field Service Representatives x 4.	

Major equipment received and quantities to 30 Jun 12
Initial Deployment Capability/Initial Operational Capability – Completed. Sufficient C-RAM S&W and GAMB 740 systems delivered direct to Theatre for Operational use.

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	N/A					1
Preliminary Design	N/A					1
Critical Design Review	N/A					1
Detail Design Review	GAMB Acquisition	Jun 11	N/A	Jun 11		

Notes	
1	As systems are Military Off The Shelf (MOTS) Acquisitions, there is no Systems Requirements Review, Preliminary Design Review or Critical Design Review.

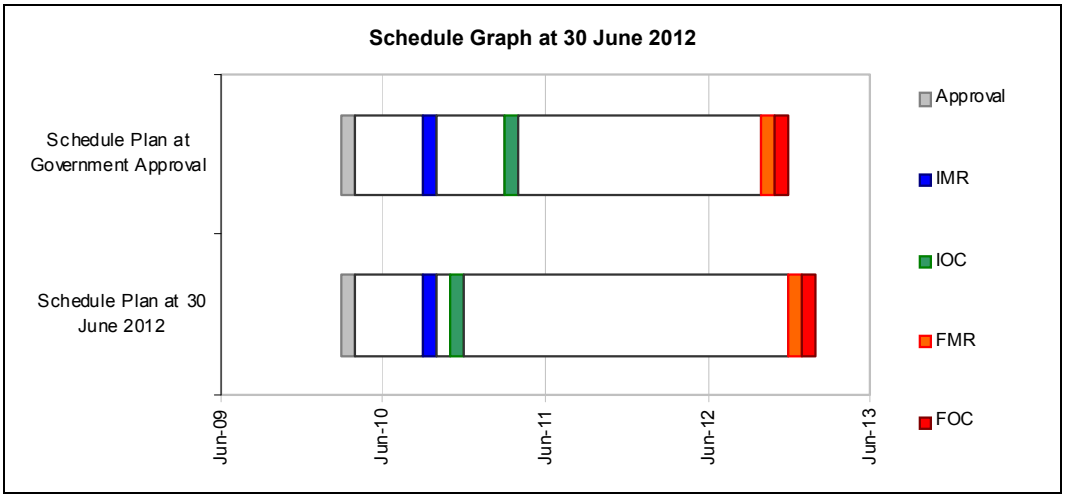
3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	C-RAM C2 to GAMB 740	Apr 11	N/A	Dec 10	(4)	1
	C-RAM C2 to GAMB Acquisition	Jul 12	Jul 12	Jul 12	0	
Acceptance	C-RAM C2	Dec 10	N/A	Dec 10	0	
	GAMB 740	Mar 11	N/A	Dec 10	(3)	2
	GAMB Platforms 1 & 2	Jun 12	Jun 12	Jun 12	0	
	GAMB Platform 3	Dec 12	Dec 12	Dec 12	0	

Notes	
1	Parallel activities and early delivery of the GAMB 740 enabled the conduct of the system integration tests ahead of schedule.
2	Concurrent activities, including the provision of logistic support from Army, facilitated acceptance of mission systems by the Commonwealth of Australia and enabled delivery to theatre ahead of schedule.

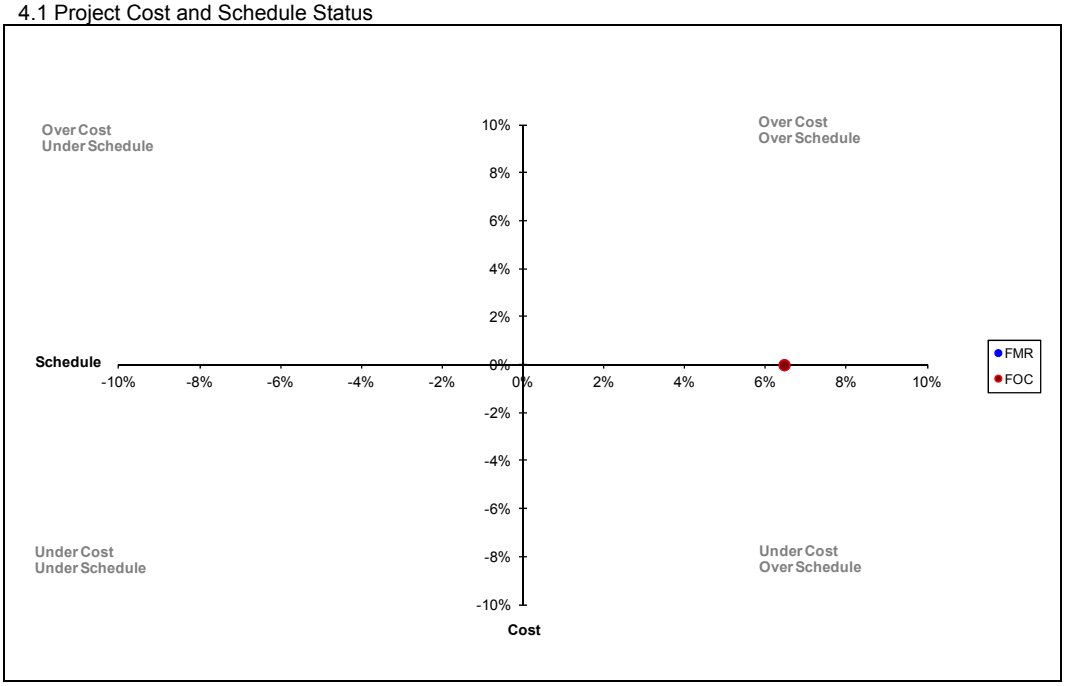
3.3 Progress Toward Materiel Release and Operational Capability Milestones

Item	Original Planned	Achieved /Forecast	Variance (Months)	Variance Explanation / Implications
Initial Materiel Release (IMR)	Oct 10	Oct 10	0	N/A
Initial Operational Capability – (IOC) Tarin Kot	Apr 11	Dec 10	(4)	Milestone achieved early as a result of delivery of GAMB 740 being ahead of schedule.
IOC – Uruzgan	Jun 11	Jul 11	1	Slight variance resulting from minor Patrol Base installation delays and revision of IOC-UR milestone requirements.
Final Operational Capability (FOC) – Afghanistan	Jul 12	Sep 12	2	FOC-AF moved to September 2012 to align with contractor production schedule and enable design acceptance, training, troop rotation and movement of GAMBs to TK.
Final Materiel Release (FMR)	Nov 12	Jan 13	2	FMR variance reflects alignment with advised contractor production schedule for the GAMB.
FOC – Australia	Nov 12	Jan 13	2	FOC-AS variance reflects alignment of GAMB delivery to Australia with service air tasking (MINDEF agreed).



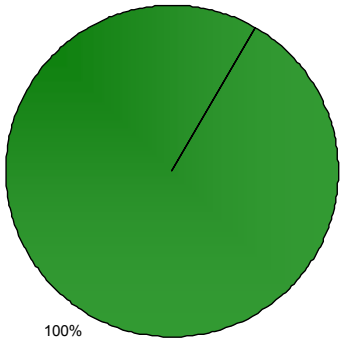
Section 4 – Project Cost and Schedule Status

4.1 Project Cost and Schedule Status



Section 5 – Materiel Capability Performance

5.1 Measures of Materiel Capability Performance

Pie Chart: Percentage Breakdown of Materiel Capability Performance	
	**Green:** The project is currently meeting materiel capability requirements as expressed in the Materiel Acquisition Agreement and latest advice to Government.
	Amber: N/A
	Red: N/A

Section 6 – Major Risks and Issues

6.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
There is a chance that System Reliability will be affected by the C-RAM capability inaccurately identifying Rocket, Artillery and Mortar threats causing a high false alarm rate leading to an impact on Safety and Performance.	Duplication of detection methods to ensure that all threats are confirmed by two or more radars. Competent training of operators to identify and override false alarms. Investment in improvement upgrades.
There is a chance that FOC-AF may be delayed as a result of the Commonwealth not being able to provide air transportation for the two GAMB systems leading to an impact on Schedule and Reputation.	Engagement with 1 Joint Movement Group during 2011 & 2012 to ensure planning for movements to allow sufficient time to arrange air movement and contingency planning.
Emergent Risks (risk not previously identified but has emerged during 2011-12)	
Description	Remedial Action
There is a chance that the SX45 will not be certified to be driven on Australian Roads by January 2013.	Liaise with Saab, Rheinmetal Military Vehicles – Australia, and The Department of Infrastructure and Transport to commence the certification (6 months early) prior to the DMO accepting 3rd GAMB System vehicle to Australia (minus radar component).
There is a chance that C-RAM introduction into service may be delayed due to a reduction in the workforce requested to conduct introduction into service activities leading to an impact on Cost, Schedule and Supportability.	Proactively engage within the DMO to ensure sufficient workforce numbers are available.
There is a chance that Project Closure may be delayed due to delays in the US program office contracting for LCMR upgrades leading to an impact on Schedule.	As C-RAM is to be introduced into service, it is expected that Project Closure may be extended. Project will continue to engage closely all LCMR stakeholders.

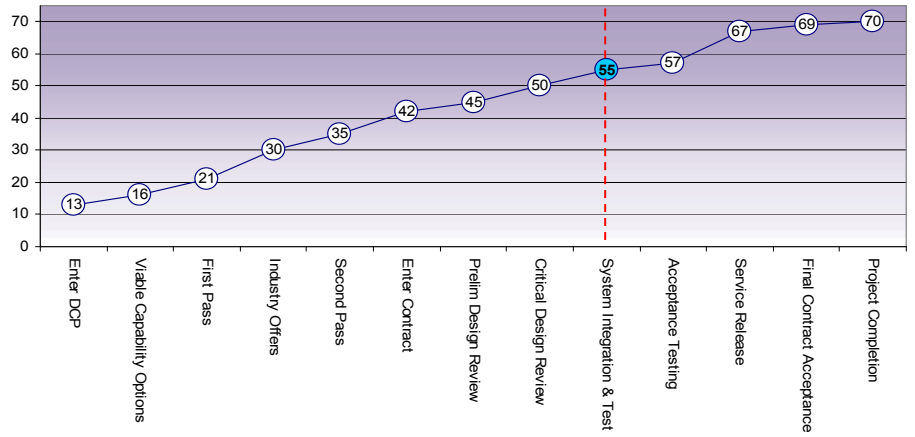
6.2 Major Project Issues

Description	Remedial Action
There is a chance that the ongoing C-RAM Supportability will be affected by extensive delay to the Net Personnel Operating Cost (NPOC) decision leading to delays in deriving and implementing C-RAM Through Life Support and potentially an unsustainable capability.	Escalate issue to CDG and Army Headquarters (Capability Manager), follow and report on progress. Plan to extend the project life, including allocation of work force element in the forward workforce management plan, to ensure the project remains staffed to complete sustainment and Introduction Into Service actions until such time as the NPOC business case is approved.

Section 7 – Project Maturity

7.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support	
Project Stage	Benchmark	8	7	8	8	8	8	8	55
System Integration & Test	Project Status	8	7	8	8	8	8	8	55
	Explanation	The C-RAM deployed capability continues to operate effectively.							



2011-12 DMO MPR Status - - - -

Section 8 – Lessons Learned

8.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Foreign Military Sales Schedule planning: When factoring FMS related schedules, there is an inclination to schedule the acceptance of the case without allowing sufficient schedule float to accommodate potential delays. Often, there will be a delay post case acceptance whilst the US Government supporting office seeks to contract their suppliers - this delay could be some six to nine months in some instances. When negotiating lead times, it is essential to gain an understanding of the contracting and procurement processes of the source country.	Contract Management Schedule Management
Sole source relationships: In a sole source relationship, projects might consider the Commonwealth of Australia would lack leverage over suppliers when negotiating contractual outcomes due to the absence of supplier competition. In this case, early and strong face-to-face engagement between the project office and FMS staff in the US and Saab staff in Sweden assured professional and outcome focused relationships. Using other Defence establishments for training, using partner nations to leverage open source commercial information to gain a sense of value for money in Australia's circumstance, and holding the supplier's reputation for further business opportunities at risk from poor performance in the current project are options available to the Commonwealth when negotiating sole source contracts.	Requirements Management Off-the-Shelf Equipment

Section 9 – Project Line Management

9.1 Project Line Management in 2011-12

Position	Name
General Manager	Ms Shireane McKinnie
Division Head	MAJGEN Grant Cavenagh
Branch Head	BRIG David Shields
SPO Director	COL Michael Chadwick
Project Director	LT COL Shaun Harding
Senior Project Manager	C-RAM C2: Mr Robert McCathie / GAMB: Mr Ben Murphy
Project Manager	C-RAM C2: Ms Tina Pham-van / GAMB: Mr James Harland

Appendices

Appendix 1: Guidance for Readers of the DMO's 2011-12 MPR Project Data Summary Sheet

The Project Data Summary Sheet (PDSS) is the core of the Major Projects Report (MPR), tabled in Parliament each year, and is the element of the MPR that the Auditor-General reviews to express an independent opinion.

The CEO DMO provides a Statement that the PDSS's comply in all material aspects with the formal Section 19(A)5 Priority Assurance Review and reflect the project by way of cost, schedule and capability status. This Statement is accompanied by a Management Representation Letter (MRL) to the Auditor-General on the accuracy and completeness of the PDSS data.

The ANAO conducts an assurance review of all projects included in the MPR, in accordance with the Auditor-General's Independent Review Report's scope, criteria and methodology. The ANAO exercises independent and professional judgement in determining its review methodology and in formulating an opinion.

Projects included in the 2011-12 MPR are either "Repeat" projects i.e. projects that appeared in the 2009-10 MPR and are providing an update in the 2011-12 MPR or "New" projects not previously reported in an MPR.

Security classified data is not included in the MPR, however such information is made available to the ANAO where it is relevant in support of the ANAO's review of the PDSSs.

GUIDANCE FOR THE DEVELOPMENT OF THE PROJECT DATA SUMMARY SHEETS (PDSSs)

Data Element No / Heading	Data	Definition/ Description
SECTION 1 – PROJECT SUMMARY		
Project Header	Project Name	The name of the project as approved by Government.
	Project Number	The number of the project as approved by Government.
	Capability Type	Is one of the following: • New Capability; • Replacement; or • Upgrade.
	Service	Could be either one or a combination of: • Royal Australian Navy; • Australian Army; • Royal Australian Air Force; or • Joint Services.
	Government 1st Pass Approval	The date Government 1st Pass Approval was given.
	Government 2nd Pass Approval	The date Government 2nd Pass Approval was given.
	Total Approved Budget (current)	The current approved budget for the project. *Note: This figure should agree to the Total Budget in Section 2.1.*
	2011-12 Budget	The estimated project expenditure for 2011-12 as detailed in the Portfolio Additional Estimates Statements (PAES). *Note: This figure should agree to the Estimate in Section 2.2.*
	Project Stage	The Lifecycle Gate as reported in the Monthly Reporting System (MRS).
	Complexity	The Acquisition Categorisation (ACAT) level of the project.
Section 1.1 – Project Description	Description	One paragraph description of the project which should be written in terms of capability delivery and, where appropriate, mention equipment quantities. This information should be consistent with other sections of the PDSS.
Section 1.2 – Current Status	Cost Performance	At a strategic level, state the project's current progress against its approved and in-year budgets, and provide a succinct explanation of causes for variations. An additional 'Assurance Statement' on the project's budget performance should be disclosed:

Data Element No / Heading	Data	Definition/ Description
		'Noting the budget remaining for completion of the project, together with the estimated future expenditure and current known risks, the DMO considers that there is sufficient budget remaining for this project'. This section must be consistent with the data in Section 2 Financial Performance.
	Schedule Performance	At a strategic level, briefly describe key schedule milestones achieved so far and issues facing the project in achieving future milestones. Milestone achievements or non-achievements in the current year should also be explained. This section must be consistent with what is stated in Section 3 Schedule Performance.
	Materiel Capability Performance	At a strategic level, detail how the systems under acquisition are performing. Detailed technical performance of systems is to be avoided and classified information is not to be disclosed in this section.
Section 1.3 – Project Context	Background	A succinct summary level statement that covers Government approvals history and any strategic changes that have occurred since approval.
	Uniqueness	Brief explanation of the particular aspects that make the project unique.
	Major Challenges	Describe the challenges the project faced in the reporting year and what it is likely to face in the coming year. The focus should reflect those risks and issues that are of a strategic nature rather than short-term problems.
	Other Current Projects / Sub-projects	Only include approved projects with the main project number e.g. SEA xxxx and state the phase of the project. Describe the name of the project and a brief description of the capability (i.e. one or two short sentences).
Section 1.4 – Linked Projects	Linked Projects (Project Dependency)	The name and number of the project. Provide a brief description of the project and the nature of the dependency. Linked projects are those projects that the project relies on to deliver project outcomes.

Data Element No / Heading	Data	Definition/ Description
SECTION 2 – FINANCIAL PERFORMANCE		
Section 2.1 – Project Budget and Expenditure History	Original Approved	The approved project cost for the DMO element of the project at Government Approval.
	Real Variation	**"Scope"** changes are attributable to changes in requirements by Defence and Government. These generally take the form of changes in quantities of equipment, a change in requirements that result in specification changes in contracts, changes in logistics support requirements or changes to services to be provided which are accompanied by a corresponding budget adjustment. *Note: Where the original approved amount above is not Second Pass Government Approval, Projects are to disclose the actual Government Second Pass Approval amount as such in the description column (in bold) and not as a scope real variation.* **"Transfers"** occur when a portion of the budget and corresponding scope is transferred to or from another approved project in DMO or to another Group in Defence in order to more efficiently manage delivery of an element of project scope and to vest accountability for performance accordingly. **"Budgetary Adjustment"** is made to account for corrections resulting from foreign exchange or indexation accounting estimation errors that might occur from time to time. Also included under this heading are Departmental administrative decisions that result in variations such as efficiency dividends harvested from project budgets or adjustments made to fund initiatives such as Skilling Australia's Defence Industry (SADI). **"Budget Cost Savings"** Cost savings attributed to any negotiated Foreign Military Sales or commercial contracts. These funds have been handed back to the Defence Portfolio. *The elements above are to be subtotalled to*

Data Element No / Heading	Data	Definition/ Description
		give a single amount for all real variations (including Government Second Pass approvals).
	Price Indexation Variation	Variations to the Original Approved project cost for the DMO element of the project due to price indexation adjustments to take account of variations in labour and materiel indices over time. This is disclosed where applicable, i.e. not for projects approved in out-turned prices.
	Exchange Variation	The variations to the Original Approved project cost for the DMO element of the project due to foreign exchange adjustments brought about by changes in foreign exchange rates for payments in foreign currency.
	Total Budget	The sum of the above.
	Prior to Jul 11	This item comprises all amounts incurred in all periods prior to the current reporting period (i.e. contract level expenditure up to 30 June 2011). All expenditure is to be presented in brackets to indicate a negative figure. Reporting of expenditure is to be split into the following: **"Contractor"** expenditure against each of the top 5 contracts, restricted to contracts valued at 10% of the current approved project cost or $10m. **"Other"** which comprises operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned contracts and minor contract expenditure. • It is generally expected that 'other' expenditure will not exceed 10% of total prior period expenditure. However, in the event that 'other' expenditure exceeds this threshold, additional explanation will be required within the Notes section outlining the key aspects of the expenditure. *The two expenditure elements above are to be subtotalled to give a single amount for all prior period expenditure.*
	FY to Jun 12	This item comprises all amounts incurred in the

Data Element No / Heading	Data	Definition/ Description
		current reporting period (i.e. contract level expenditure from 1 July 2011 to 30 June 2012). All expenditure is to be presented in brackets to indicate a negative figure. Reporting of expenditure is to be split into the following: **"Contractor"** expenditure against each of the top 5 contracts, restricted to contracts valued at 10% of the current approved project cost or $10m. **"Other"** expenditure which comprises operating expenditure, contractors, consultants, contingency, other capital expenditure not attributable to the aforementioned contracts and minor contract expenditure. • It is generally expected that 'other' expenditure will not exceed 10% of total expenditure in the current reporting period. However, in the event that 'other' expenditure exceeds this threshold, additional explanation will be required within the Notes section outlining the key aspects of the expenditure. *The two expenditure elements above are to be subtotalled to give a single amount for FY expenditure.*
	Total Expenditure	This item discloses total project expenditure as at the reporting date (i.e. 30 June 2012) and is the sum of prior period and current period expenditure reported above. All expenditure is to be presented in brackets to indicate a negative figure.
	Remaining Budget	Is the subtraction of total expenditure from total budget, thus showing the unspent portion of the approved budget, as at reporting date.
Section 2.2 – In-year Budget Expenditure Variance	Estimate ($m)	The estimated project expenditure for 2011-12. The data needs to present the project's 'Year to Date' performance in financial terms. It must explain the difference between the PAES and the End of Financial Year Actual Expenditure (If projects are subject to variation post PAES, then disclosure is required in a note).

Data Element No / Heading	Data	Definition/ Description
	Actual ($m)	The actual project expenditure incurred in the current reporting period (i.e. 2011-12). *Note: This figure should agree to the FY to Jun 12 total figure in Section 2.2.*
	Variance ($m)	Budget expenditure variances are to be disaggregated and disclosed separately as per the variance factors described below. The sum of these should give a total variance equal to the difference between the Budget Estimate and actual expenditure.
	Variance Factor	This section provides a range of factors attributable to the cause of the variances between the Budget Estimate and actual expenditure. These are expressed as the standard variance factors of: • Foreign Military Sales (FMS); • Overseas Industry; • Local Industry; • Brought Forward; • Cost Savings; • FOREX Variations; and • Commonwealth Delays.
	Explanation	Explanations must address all of the variance factors noted above, where relevant.
Section 2.3 – Contract Details	Contractor	List the name of the contractors for the top 5 contracts. Note that the top 5 contracts will be restricted to contracts that are valued at 10% or more of the current total budget or $10m.
	Signature Date	The date the contract was signed.
	Price (Base) at Signature	This is the value of the contract at contract signature in the applicable price basis.
	Price (Base) at 30 Jun 12	This is the value of the contract in the applicable price basis as at 30 June 2012. Where projects are the Prime Systems Integrator or where the structure of a contract prevents disclosure of 'Base Date' values, these projects will disclose contract values in 'Current' dollars as at 30 June 2012.
	Type (Price basis)	The usual choices for this include: • Variable, • Firm • FMS • Alliance or

Data Element No / Heading	Data	Definition/ Description
		• MoU
	Form of Contract	This refers to the contract template used i.e. DEFPUR 101, ASDEFCON (Strategic, Complex). For unique arrangements such as Alliance or PPP they would need to be specially treated. For Foreign Military Sales - declare "FMS". For Memorandum of Understanding declare "MoU".
	Quantities at Signature and 30 Jun 12	The quantity of major equipment under contract as at the date the contract was signed and also as at 30 June 2012. The quantity of contracted equipment should only be provided at a summary level.
	Scope	Generally only include hardware in this section and restrict it to a platform level summary, disclosing only major prime mission and support system elements (e.g. 4 x C-17 Globemaster Aircraft).
	Major Equipment received and quantities to 30 Jun 12	Detail the Major equipment and quantities the project has received to 30 June 2012.
SECTION 3 – SCHEDULE PERFORMANCE		
Section 3.1 – Design Review Progress	Review	The events to be included are shown below as they are applicable to the project: • System Requirements Review • Preliminary Design Review • Critical Design Review.
	Major System/ Platform Variant	State the major system that the Design review refers to.
	Original Planned	The originally planned achievement dates for the events per the contract at execution.
	Current Planned	Replanned dates as evidenced by a contract amendment.
	Achieved/ Forecast	Achieved: The date the event was achieved, or Forecast: The expected date for achievement.
	Variance (months)	The difference between 'Original Planned' and 'Achieved / Forecast'.
	Notes	A top level description of the reasons for the variance to Achieved / Forecast dates, and any additional background information as required.
Section 3.2 – Contractor	Test and Evaluation	The events to be included are shown below as they are applicable to the project:

Data Element No / Heading	Data	Definition/ Description
Test and Evaluation Progress		• System Integration • Acceptance.
	Major System/ Platform Variant	State the major system that the Test and Evaluation event refers to. If there are significant variants for the major systems then state what they are.
	Original Planned	The originally planned achievement dates for the events per the contract at execution.
	Current Planned	Replanned dates as evidenced by a contract amendment.
	Achieved/ Forecast	Achieved: The date the event was achieved or Forecast: The expected date for achievement.
	Variance (months)	The difference between 'Original Planned' and 'Achieved / Forecast'.
	Notes	A top level description of the reasons for the variance to Achieved / Forecast dates, and any additional background information as required.
Section 3.3 – Progress Toward Materiel Release and Operational Capability Milestones	Item	Represented at a whole of capability level, unless key milestones are broken out under individual Mission or Support Systems.
	Original Planned	The original date on which the Mission or Support System element was scheduled to achieve the key milestone.
	Achieved/ Forecast	Achieved: The date the event was achieved or Forecast: The expected date for achievement.
	Variance (months)	The difference between original and achieved.
	Variance Explanations	A top level description of the reasons for the variance to 'Achieved / Forecast' dates.
Schedule Status Bar Graph		DMO MPR Management will input the projects existing data on: 2nd Pass Approval, IMR, IOC, FMR and FOC into the Bar Graph formula and produce the Graph.
SECTION 4 – CONSOLIDATED COST AND SCHEDULE STATUS		
Section 4.1 – Project Cost and Schedule Status		DMO MPR Management will input the 'Project Status' for Cost and Schedule as at 30 June 2012 using projects data contained in Tables 2.1 "Project Budget Status" and 2.2 "Project Schedule Status" of the DMO component of the MPR to produce the graph.
SECTION 5 – MATERIEL CAPABILITY PERFORMANCE		
Section 5.1 – Measures of Materiel	Capability Pie Chart and associated Traffic Light	Capability Pie Chart and associated narratives will provide a percentage breakdown of the FMR Milestones and Completion Criteria, as

Data Element No / Heading	Data	Definition/ Description
Capability Performance	Analysis	identified in the respective MAA, prior to ANAO site visit and further updated to reflect status at 30 Jun 12. The pie chart analysis / narrative (Green, Amber & Red) is to be provided at the strategic level, including: • Issue: Strategic level detail of the issue/s impacting the milestones and completion criteria. • Remediation: Strategic level detail of remedial activity to recover performance. **Please note: Detailed technical performance of systems is to be avoided. No classified information is to be disclosed in this section.**
SECTION 6 – MAJOR RISKS AND ISSUES		
Section 6.1 – Major Project Risks	Identified Risk (Risk identified by standard project risk management processes)	Description: A major project risk is one that is rated high or extreme pre-mitigation and has DMO Executive attention. Remedial Action: The risk mitigation / treatment proposed for the risk identified (These must be actionable measures).
	Emergent Risk (Risk identified during 2011-12)	Description: A major project risk that was not previously identified in the risk log but has emerged this year, rated as high or extreme pre-mitigation and has DMO Executive attention. Remedial Action: The risk mitigation / treatment proposed for the risk identified (These must be actionable measures).
Section 6.2 – Major Project Issues	Description	Issues are high or extreme risks that have been realised or issues that have arisen that require management action to address.
	Remedial Action	What remedial action is proposed for the issue identified.
SECTION 7 – PROJECT MATURITY		
Section 7.1 – Project Maturity Score and Benchmark	Benchmark	Benchmark Maturity Score.
	Project Status	The maturity score recorded in the June 2012 MRS record.
	Explanation	A short explanation is required for each element of the Maturity Score where there is a difference

Data Element No / Heading	Data	Definition/ Description
		between the Current and Benchmark scores.
SECTION 8 – LESSONS LEARNED		
Section 8.1 – Key Lessons Learned	Project Lesson	Describe the project lesson (at the 'Strategic' level) that has been learned.
	Categories of DMO Systemic Lessons	Select one of the following 'DMO Systemic Lessons' that can be cross referenced back to each individual Project Lesson. Lessons learned can include: • Requirements Management • First of Type Equipment • Off-the-shelf Equipment • Contract Management • Schedule Management • Resourcing • Governance
SECTION 9 – PROJECT LINE MANAGEMENT		
Section 9.1 – Project Line Management in 2011-12	Line Managers List	• General Manager • Division Head or Program Manager • Branch Head • Project Director This list will contain those persons who occupied their respective position during the course of 2011-12.

Appendix 2: Types of Acquisition Undertaken by the DMO

There are three main types of acquisition undertaken by the DMO:

- **Military-Off-The-Shelf (MOTS) –** Military products that are available for purchase Off-The-Shelf (OTS) and will typically have been delivered to another military or Government body, or commercial enterprise in a similar form to that being purchased at the time of approval. The definition of OTS needs to strike a balance between sensible variations to a design with low cost and risk impact; such as small modifications to meet Australian environmental laws; and those that add to complexity, cost and risk such as overseas systems that require integration with existing platforms.
- **Australianised MOTS –** A modified MOTS product where modifications are made to meet particular ADF operational requirements. The modification involved may include an increased level of technical complexity and risk with a general increase in cost and schedule.
- **Developmental –** A product that is not available OTS and has to be developed specifically to meet the ADF's particular operational requirements. These products generally involve a high degree of technical development and associated risk which in turn is reflected in cost and schedule.

As indicated in Chapter 1, the cost-schedule-risk parameters increase as the level of Australianisation of OTS equipment or the level of development required increases.

Appendix 3: Categorising Acquisitions

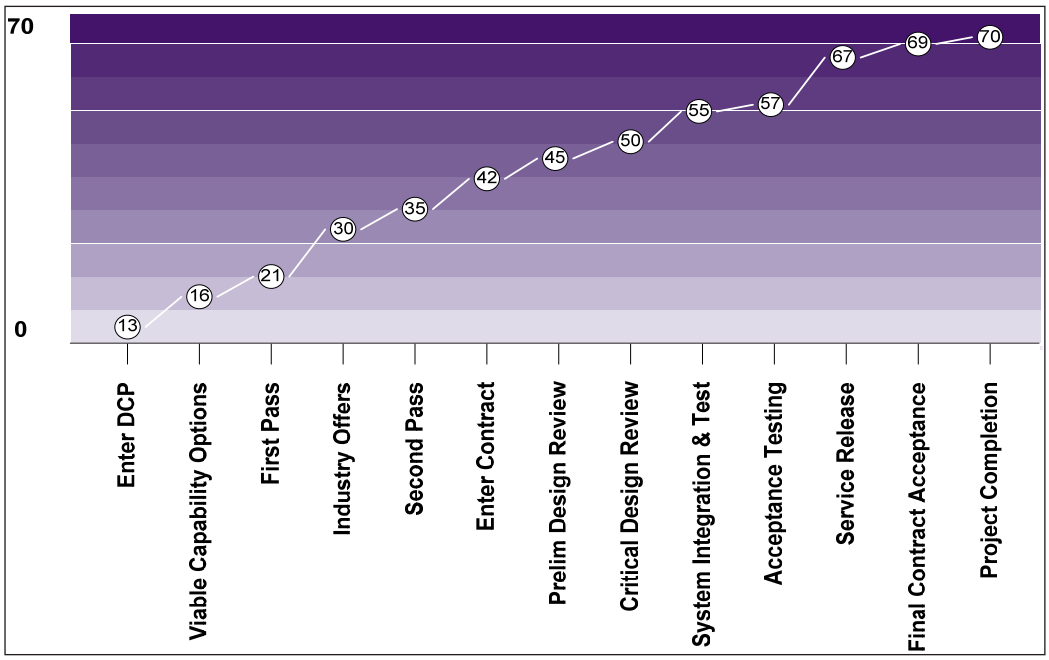
The DMO categorises its acquisition projects to enable it to differentiate between the complexity of business undertakings, focus management attention, provide a basis for professionalising its workforce and facilitate strategic workforce planning. Projects are graded into one of four Acquisition Categories (ACATs) which are as follows:

- ACAT I – These are major capital equipment acquisitions that are normally the ADF's most strategically significant. They are characterised by extensive project and schedule management complexity and very high levels of technical difficulty, operating, support and commercial arrangements;
- ACAT II – These are major capital equipment acquisitions that are strategically significant. They are characterised by significant project and schedule management and high levels of technical difficulty, operating, support arrangements and commercial arrangements;
- ACAT III – These are major or minor capital equipment acquisitions that have a moderate strategic significance to the ADF. They are characterised by the application of traditional project and schedule management techniques and moderate levels of technical difficulty operating, support arrangements and commercial arrangements; and
- ACAT IV – These are major or minor capital equipment acquisitions that have a lower level of strategic significance to the ADF. They are characterised by traditional project and schedule management requirements and lower levels of technical difficulty, operating, support and commercial arrangements.

Appendix 4: Project Maturity Scores – Monitoring Progress

The DMO's Project Maturity Score quantifies the maturity of a project by way of a score based on the project managers' judgement at defined milestones in its capability development and acquisition phases. This score is then compared against an ideal or benchmark score for that milestone. A project's maturity is assessed at 13 milestones across its lifecycle and for each of these milestones the ideal or benchmark condition is represented by a benchmark score as shown in Figure 1.

Figure 1 - Benchmark Maturity Scores



The Project Maturity Score comprises a matrix of seven attributes:

- Schedule;
- Cost;
- Requirement;
- Technical Understanding;
- Technical Difficulty;
- Commercial; and

- Operations and Support.

The Project Manager assesses the level of maturity that a project reaches at a particular milestone for each of these attributes on a scale of 1 to 10. Score assessment is made by selecting the most appropriate description that fits the question under the attributes columns. Project Maturity Scores provide a means of communicating in a simple fashion an indicative 'as is' versus a 'should be' condition to inform decision making for each project. The scores are not precise and are not intended to enable exact comparisons across projects. Following is a description of the Project Maturity Score Attributes.

Project Maturity Score Attributes

ATTRIBUTE DESCRIPTORS VS MATURITY SCORE							
	Schedule	**Cost**	**Requirements**	**Technical Understanding**	**Technical Difficulty**	**Commercial**	**Operation and Support**
DELIVERING THE DMO ACQUISTION PROJECT (Delivery Performance)							
Maturity Score	How are the IMR & FMR milestones tracking against project approval?	How well is the cost tracking against project approval?	How well are the requirements defined in the MAA being realised?	Defence's understanding of the technical solution and arrangements to operate and support the capability.	How well are the design and its validation coming along?	How well is industry performing?	How well prepared is the project to transition from Acquisition to Sustainment?
10	Achieved	Proven	Demonstrated	Fully Understood	Proven	All Delivered	Operational
9	Confident	Contingency Remains	Tested	Transferred	Tested	Delivered	Transitioning
8	Acceptable	Confident	Designed	Arranged	Integrated	Delivering	Integrated
7	In Tolerance	Within Contingency	Acceptable	Needs Understood	Designed	Manages Risk	Being Procured
6	Manageable	Negotiated	Contracted	Provided for	Planned	As Contracted	Defined
DEFINING THE DEFENCE PROJECT (Process Maturity)							
Maturity score	How realistic is the schedule?	What is the quality of the project estimate?	How well are the requirements defined and understood?	How well are the solutions understood?	How difficult is to integrate the component parts?	Can industry deliver the solution?	Is the impact on the existing operating and support environment understood?
5	Confirmed	Pre- Endorsed capability	Endorsed	Understood	Manageable	Offered	Planned
4	Understood	Industry Tested	Documented	Feasible	Feasible	Industry Proposals	Known
3	Feasible	Reasonable	Solution Classes	Coalescing	Building Blocks	Strategy Developed	Issues Understood
2	Drivers known	Plausible	Scenarios identified	Minimal	Conceptual	Possible	Conceivable
1	Speculative	Speculative	Deficiency	Not at all	Not Defined	Not Yet	Not Identified

Project Life Cycle Gates CDG Responsibility DMO Responsibility	Represents	Benchmark Maturity Score
Enter Defence Capability Plan	The stage at which a project is recommended to Government for inclusion in the Defence Capability Plan	13
Decide Viable Capability Options	The stage in the capability definition/ development process when 1st Pass options that will be put to Government are decided by CCDG	16
1st Pass Approval	The stage at which 1st Pass options to be put to Cabinet are endorsed by the DCC	21
Industry Proposals/ Offers	The stage at which formal responses from industry to an RFP or RFT have been received and evaluated	30
2nd Pass Approval	The stage in the capability definition/ development process when 2nd Pass Approval is sought from Cabinet	35
Contract Signature	On completion of contract negotiations and on concluding contract signature of a contract that has maximum influence on the project.	42
Preliminary Design Review(s)	On completion of System Requirements Reviews and when Preliminary Design Reviews are completed	45
Detailed Design Review(s)	On completion of Detailed Design Reviews	50
Complete System Integration and Test	On completion of Verification and Validation activities at the system and subsystem levels	55
Complete Acceptance Testing	On completion of all contractual acceptance testing and associated testing activities nominated in the TEMP	57
Initial Materiel Release (IMR)	Occurs when the materiel components that represents the DMO contribution to Initial Operational Release (IOR) are ready for transition to the Capability Manager	60

Final Materiel Release (FMR)	Occurs when all the products and services within the MAA have been transitioned to the Capability Manager.	63
Final Contract Acceptance	On Final Acceptance as defined in the contract.	65
MAA Closure	Occurs when all of the actions necessary to finalise the MAA have been completed, including completion of all financial transactions and records, completion of contracts and transfer of remaining fund.	66
Acceptance Into Service	The point at which the Capability Manager accepts the Materiel System, supplies and services for employment in operational service[261]	67
Project Completion	Project closure is achieved when the project is financially closed, support arrangements have been transitioned and all MAA requirements have been demonstrated and transitioned.	70

[261] Where multiple elements of a mission system are involved (e.g. 3 surface combatants) this date represents Initial Operational Capability (IOC) of the initial Subset, including its associated operational support, i.e. when the Initial Operational Capability is achieved. (DI(G) OPS 45-2 refers).

Appendix 5: JCPAA Report 429: REVIEW OF THE 2010-11 DEFENCE MATERIEL ORGANISATION MAJOR PROJECTS REPORT

Recommendations and DMO Response

Recommendation 1

The Joint Committee of Public Accounts and Audit recommends that the Defence Materiel Organisation include in the 2011-12 Major Projects Report a section specifically providing information on the activities being undertaken to minimise schedule slippage and the results of those activities.

DMO Response: Agree

The Defence Materiel Organisation will include the section in the 2011-12 Major Projects Report.

Recommendation 2

The Joint Committee of Public Accounts and Audit recommends that the Defence Materiel Organisation and the Australian National Audit Office continue to develop the Major Project Report Guidelines jointly but that the Australian National Audit Office take administrative responsibility for updating the Guidelines and submitting them to the Joint Committee of Public Accounts and Audit annually.

DMO Response: Agree

The Defence Materiel Organisation supports the Committees recommendation to move administrative responsibility of the Guidelines to the Australian National Audit Office. The key to the success of the Major Project Report has been the adoption of a collaborative attitude in developing the Guidelines and the Defence Materiel Organisation will cooperate with the Australian National Audit

Office to see this continue.

Recommendation 3

The Joint Committee of Public Accounts and Audit recommends that the Defence Materiel Organisation includes a discussion on the use by, and value of, the Major Projects Report by external stakeholders in the 2011-12 Major Projects Report.

DMO Response: Agree

The Defence Materiel Organisation intends to contract an independent firm to conduct a survey of external stakeholders to assess use and value of the Major Projects Report. A summary of the findings will be published in the 2011-12 Major Project Report.

Appendix 6: Lessons Learned

AIR 5376 Phase 3.2 – F/A-18 HORNET UPGRADE STRUCTURAL REFURBISHMENT

Project Lesson	Categories of Systemic Lessons
Closely monitor the return of repairable parts for the production installation phase to ensure no delays are experienced during the rebuild of each aircraft being modified. The more severe action that could be taken is to direct that repairable parts are not removed during the aircraft modification. Close monitoring of modification kit holdings and subsequent timely procurement is required to ensure kit deficiencies do not arise impacting on production schedule.	Schedule Management
The data generated by DSTO as part of the centre barrel test-to-destruction programme will result in a considerable cost saving to the project (due to a reduction in the number aircraft requiring SRP2) and an increased flexibility in aircraft modification induction dates.	Requirements Management
Modifying an ageing weapon system such as the Hornet aircraft can present emergent work such as corrosion and cracking in the aircraft structure which must be rectified while the aircraft is disassembled. Adequate project contingency budget and schedule must be programmed to accommodate such uncertainties.	Requirements Management

Project Lessons Learned

The 2011-12 MPR builds on the Lessons Learned (at the organisational level) reported in last year's report. Set out below is a summary of progress against the key areas of Lessons Learned.

Requirements Management and First of Type Equipment

To address issues associated with understanding the level of maturity of requirements and progression through the various systems engineering reviews the standard procedure covering Function and Performance Specification (FPS) development was amended to provide further guidance on the maturity levels for the FPS when it is progressing through the capability development process. Additionally, policy, guidance handbook and a standard procedure was promulgated to assist with assessing the suitability and risks for system reviews conducted in acquisition.

To improve the quality of objective evidence, or data, relating to acquiring and sustaining materiel systems, emphasis has been applied in the areas of configuration management and Verification & Validation (V&V). Improvements in the V&V policy, handbook and a standard procedure provide a more robust approach in utilising risk-based methodology to ensure that the necessary objective evidence is obtained were issued. To reinforce the data quality of materiel systems an overarching configuration management

policy has been promulgated to ensure reliable materiel system status throughout acquisition and sustainment.

Integration

Integration has been identified as an area of potential high risk within DMO due to the complexities associated with the interdependencies between materiel systems and sub-systems. To address this risk two main suites of documentation have been produced this year for interface and integration management. The integration policy and handbook was aimed at providing a basic framework and supporting guidance materiel for integration efforts within DMO whilst the companion interface management policy, handbook and standard procedure provide a standard way to elicited, document and control interfaces.

Resourcing

Workforce Reduction

The 2012-13 Budget handed down in May has required departments, including Defence, to consider staffing levels within the current and future budgetary constraints being applied. Defence's reduction in workforce is being conducted along with a streamlining of shared services across Defence which aims to provide services with reduced resources. Workforce reductions in the DMO will have some impact on schedule achievement, these impacts are being assessed.

Managing Contractors

DMO will trial the use of managing contractor arrangements in lower risk projects with the aim to reduce schedule and therefore overall cost to defence of project delivery through the use of appropriate incentives to suitably qualified external managing contractors.

Information and Communications Technology (ICT) Services

The IT systems in use by DMO projects are heavily reliant on CIOG to effectively deliver its outcomes. A strategic DMO wide IT plan clearly identifying priorities for corporate IT systems is under development along with work to further reduce the breadth of software used to support DMO activities.

Professionalisation

The DMO also continues to expand the range of competency based development opportunities to ensure its workforce can apply the necessary knowledge and skills to the required standards. Evaluation of DMO courses has resulted in reinvigoration of a number of courses as well as the introduction of new courses for project management, engineering, logistics, procurement and contracting job families.

Schedule Management

A further recommendation from JCPAA Report 429 was for DMO to include in the 2011-12 Major Projects Report a section specifically providing information on the activities being undertaken to minimise schedule slippage and the results of those activities.

Schedule Performance Monitoring

Initial Materiel Release (IMR) and Final Materiel Release (FMR) key milestones have been embedded into DMO policy. Updates to processes and procedures have been implemented to ensure consistency of the application and integration of IMR and FMR milestones. During 2011-12, the DMO continued the Project Schedule Analysts in Training (PSAiT) program, which is designed to further develop DMO's scheduling skill set (Job Family) in the competencies of project planning, scheduling and analysis. The nine-month development program aims to produce trainees with comparable skills, knowledge and exposure to a scheduler with two to three years experience. The twenty PSAiT trainees of 2012 participated in a targeted learning and development program that included a work placement, compulsory training courses, group workshops and on the job coaching.

Project Performance Reporting System

The Project Performance Reporting System (PPRS), which was released in November 2011 provides cost and schedule Earned Value Performance metrics to enable managers to assess project status, budget feasibility and overall project achievement against plan. The system was updated in August 2012 to incorporate additional metrics including Early Indicator and Warning parameters and labour indices. Another release is planned for later in 2012 which will include lead indicators.

Schedule Slippage due to Budget Impacts

The Governments 2012-13 Budget handed down in May included decisions to delay Defence acquisitions due to budgetary constraints. This includes some DMO major projects that have been required to re-align their schedule to realise budget deferrals or reductions as agreed by the Government.

Acquisition and Sustainment Planning Framework

The Mortimer stream of the Strategic Reform Program includes improvements to DMO's acquisition strategy development process during the requirements phase of the capability systems life cycle. To support this improvement activity, an early exposure draft of the DMO's new Acquisition and Support Implementation Strategy (ASIS) development guidance was released for comment in June 2011. The complete set of ASIS guidance and supporting training is under review and expected to be released in the second quarter of 2013. Two projects are assisting with the development of the accompanying templates to provide a practical document for users.

Projects are also starting to include provision in their First Pass approval documentation to fund risk reduction activities (Offer Definition) with preferred tenderer(s) in strategic-level acquisitions. This risk reduction activity, early in the Offer Definition stage, requires DMO projects and their preferred tenderer(s) to undertake a thorough examination of assumptions and estimates to reduce project risks and to improve the viability of schedules prior to contract commitment by the Commonwealth. Milestone entry criteria and performance remedies in the ASDEFCON templates are also being adjusted to promote earlier visibility of schedule performance variances and to incentivise better schedule performance by the contractor.

Schedule Estimation

To improve the quality of schedule estimates, the DMO has established a schedule data repository. The repository provides DMO project managers access to project cost and schedule estimation data for software intensive projects as a basis for comparison. DMO has signed an agreement with the United States Department of Defense, Defense Technical Information Center (DTIC) to participate in the DTIC sponsored Systems and Software Cost Performance Analysis Toolkit. The agreement allows DMO to contribute to and access historical 'completed actual' system development data (sanitised to prevent projects identification). Schedule and Cost Estimation Relationship derived from the data can be use as Basis of Estimate in project planning and

schedule preparation. The DMO, in conjunction with Capability Development Group is developing a Defence Cost and Schedule Estimation Manual which will assist projects with the standards required for the development of cost an d schedule estimates at First Pass and Second Pass. A more standardised approach to schedule estimation and access to data to benchmark estimates will provide the baseline for future estimation improvements.

Key Project Documentation

The DMO has produced a list of Key Project Documentation that is to be maintained by Project Offices to ensure project baselines for cost, schedule, and scope are traceable and maintained. The list of key project documents will be incorporated into policy in the third quarter of 2012.

Capability Development Improvement Program

The DMO is currently working with Capability Development Group to more closely align and integrate schedules through the needs and requirements phase leading to second pass. The Project Management Standardisation Office (PMSO) is assisting CDG with the trialling of Open Plan Professional and the development of a standardised Work Breakdown Structure (WBS). The standardised WBS down to level 4.

DMO Schedule Compliance Risk Assessment Method (SCRAM)

The Schedule Compliance Risk Assessment Method (SCRAM), developed by the DMO to foster and encourage schedule performance improvement, has been further refined. To date, eleven assessments have been undertaken, or are underway, including a second review of the AIR 6000 New Air Combat Capability (NACC) Joint Strike Fighter System Demonstration and Development (SDD) phase. SCRAM is based on an ISO 15504 (an Assessment Framework Standard) compliant Process Reference and Assessment Model (PR/AM) which is a model of schedule management processes and best practices, structured using 'cause and effect' architecture to facilitate identification of root causes of schedule slippage for individual projects[262]. The method is also used to estimate the degree of schedule non-compliance through Schedule Risk Analysis Monte Carlo simulation.

[262] Further information on SCRAM and access to SCRAM products can be obtained from the website: http://scramsite.org

Further development and refinement of the DMO SCRAM Model and the assessment process is continuing, including an update to the PR/AM process reference, the introduction of SCRAM training courses, development of a SCRAM Assessors guidebook and selection of a software assessment tool to improve SCRAM assessment productivity.

Off-The-Shelf Equipment

Defence policy mandates that if an Off-The-Shelf (OTS) option exists for Defence's capability requirements, it will be presented for Government consideration and will be the benchmark against which a rigorous cost-benefit analysis of any additional capability is sought, taking into account the cost and risk of doing so.

Likewise, any option that proposes 'Australianisation' or modification to an existing OTS capability solution must detail the rationale and associated costs and risks to undertaking such modifications.

Projects seeking First Pass Approval during 2011-12 were subject to this policy, which ultimately aims to provide greater visibility and fidelity over the risk identification and treatment process associated with capability solutions, including OTS.

OTS solutions are not free of risk and any cost/benefit analysis of OTS solutions must consider the potential benefits and risks of OTS solutions, expanded under Table 1.6. The major benefits of OTS include: proven solution; more predictable cost and schedule; the use of global supply chains; greater potential for interoperability with allies; and, access to potentially lower cost and better informed upgrade cycles. These benefits should be balanced against possible risks and costs of OTS which include: potentially, not delivering leading edge technology; a market driven product which may not fully meet the ADF's capability need; market-driven product/update cycles with which Defence must keep pace and fund; potentially limited access to technical data; certification and regulatory challenges; integration costs of disparate systems; and the strategic need for Australian industry capability and a secure supply chain which may not be possible for an overseas sourced OTS.

Table 1.6: Off-The-Shelf Benefit and Risk Summary

Benefits of Off-The-Shelf	Constraints, Risks and Cost Drivers of Off-The-Shelf
Proven Solution: By definition, OTS products are mature solutions that have completed the higher risk research, development, evaluation and certification activities and, in most instances, have been proven in service. Predictable Cost and Schedule: Because OTS products have completed development, the unit price and delivery schedule is known. Global Supply Chains: There is potential to leverage international supply chains to reduce costs and secure diversity of supply. Interoperability: Where the same OTS systems are already in service with allies, there is an inherent level of interoperability. Upgrades: OTS products are enhanced and upgraded based on the experiences of multiple users, and the benefits and costs on these improvements are shared across multiple customers.	Technological 'Edge': by definition, OTS products are mature solutions and may not offer leading edge capability. Market Driven Capability: OTS product functionality is market driven, and can fall short of Australia's full mission requirements. Intellectual Property & Technical Data: OTS products are developed for commercial benefit, and the competitive advantage resides in the intellectual property. Therefore, there is usually limited technical data available and opportunities for Australian-specific modifications and support may be limited. Integration Risk: Capability needs are rarely satisfied by a pure standalone OTS solution and require some level of integration (e.g. into platforms, with legacy systems, with other off-the-shelf systems, business processes and doctrine).

Governance

Establishment of the Independent Project Performance Office:

On 1 July 2011 the Independent Project Performance Office (IPPO) commenced operations, giving effect to a key procurement reform announcement made by

Minister for Defence, Stephen Smith, and Minister for Defence Materiel, Jason Clare[263].

The establishment of the IPPO also implements one of the key outstanding recommendations of the Mortimer Review into Defence Procurement and Sustainment, which called for an independent office to be established within the DMO to review projects and assist project teams to solve problems where necessary.

The IPPO is responsible for the conduct and management of:

- Cost Estimation and Analysis;
- Early Indicators and Warnings;
- Gate Reviews; and
- Projects of Concern

Early Indicators and Warnings Framework

Introduction of the Early Indicators and Warnings (EI&W) system was announced by the Minister for Defence on 6 May 2011, and is aimed at identifying problems with projects early in their lifecycle.

The EI&W system, is intended to identify deviation against pre-defined thresholds of defined project characteristics (scope, schedule, budget/cost) from the Government Approved baselines at Project Initiation, First Pass and Second Pass. Projects triggering a defined threshold will be notified to Government and may then be scheduled for an EI&W Gate Review. The system continues to evolve with an increased focus on identifying *lead* rather than *lag* indicators. That is, identifying project risks as early as possible and taking action to resolve issues before under-performance against cost, schedule and/or capability is realised.

Strengthening the Gate Reviews

The Gate Review Assurance Board framework provides an assurance mechanism for a consistent and robust review of major projects. This enables early identification of potential problems thereby ensuring provision of high quality and reliable advice to Defence and Government as to the health and

[263] Minister for Defence, Stephen Smith, and Minister for Defence Materiel, Jason Clare, Media Release – Independent Project Performance Office to oversee major Defence projects established, 29 June 2011

outlook of major projects. Gate Reviews may also be used as a diagnostic tool in assessing potential Projects of Concern and projects that have triggered EI&W.

Gate Reviews are chaired by DMO senior managers with Board membership tailored to address the specific issues confronting a project (business case, project management, commercial, engineering, stakeholder etc). The Boards have also been strengthened with the inclusion of at least one, and usually two, external members. Board meetings provide a forum for robust, objective discussion that injects a strategic perspective, filters optimism, analyses issues, recommends actions and assists the project to resolve challenges.

In preparation for the Board meeting, the DMO's Independent Project Performance Office conducts a robust evaluation of the project which ensures issues have been identified and brought to the attention of the Board for investigation.

If a project fails to convince the Board of its maturity or readiness to progress to the next stage of its lifecycle, the project is directed to address those risks and issues before proceeding and a further Board review may be required before progression to the next stage. Where necessary, recommendations may be made on consideration of the project as a Project of Concern.

Strengthening Projects of Concern Process

The vast majority of the DMO's major projects are delivering the materiel element of capability to the ADF as planned. However, a small number of DMO projects and sustainment products require additional senior management attention to address significant risks relating to schedule, cost, materiel capability and/or commercial factors.

In consultation with the Government, DMO developed a focused management regime for troubled projects and sustainment products identified as 'Projects of Concern' (PoC). The PoC remediation regime involves close engagement with industry, Defence and Government.

The PoC regime is closely linked to both the EI&W system and the Gate Review process. Projects triggering one or more EI&W thresholds are usually subject to a diagnostic Gate Review Assurance Board before recommendations are presented to Government on the project's status. A project may be recommended to be added to the Projects of Concern list at this point, if warranted.

Better Targeted Management Reporting

The DMO provides regular performance reports to its key stakeholders including the Government, Central Agencies, Defence Capability Managers and other elements within Defence.

In 2011-12, the DMO continued its program of reviewing both its internal and external project performance reports. The aim of the review is to have an integrated, targeted and simpler set of performance management reports that better meet user requirements to support timely and informed decision-making about DMO projects. The reports will also improve information flow.

In line with this review, in November 2011 the DMO replaced its existing external performance reports with a suite of revised performance reports based on extensive consultation with Government, Central Agencies and Defence Capability Managers.

The new reports are more succinct and make it easier to readily discern salient information on the performance of DMO projects. They significantly reduce the amount of reporting sent to the Minister each month, without compromising the information provided. The resources required to produce the new reports have also been reduced.

Appendix 7: Glossary

Acquisition Category	Definition of each of the four Acquisition Categories.
Additional estimates	Where amounts appropriated at Budget time are required to change, the Parliament may make adjustments to portfolios through the Additional Estimates process.
ADF Customer	Army, Navy, Air Force or Joint Capability.
ASDEFCON	AUStralian DEFence CONtracting suite of contracting templates.
Capability	The power to achieve a desired operational effect in a nominated environment within a specified time and to sustain that effect for a designated period. It is delivered by systems that incorporate people, organisation, doctrine, collective training, platforms, materiel, facilities, in-service support, and command and management.
Capability Manager	The Group Head or Service Chief responsible for a specific area of Australian Defence Force capability. The role of the Capability Manager is to raise, train and sustain in-service capabilities through the coordination of Fundamental Inputs to Capability and includes the service Chiefs for Army, Navy, Air Force and the Vice Chief of the Defence Force for Joint Projects.
Capital Equipment	Substantial end items of equipment such as ships, aircraft, armoured vehicles, weapons, communications systems, electronics systems or other armaments that are additional to, or replacements for, items in the Defence inventory.

Contract Change Proposal	This is a formal written proposal by the Commonwealth or the contractor, prepared in accordance with the terms and conditions of the contract, to change the contract after the effective date. After agreement by the parties, the contract is amended in accordance with the processes established in the contract
Contract Master Schedule	A time and resource based schedule for executing work under the contract.
Corporate Governance	The process by which agencies are directed and controlled, and encompasses; authority, accountability, stewardship, leadership, direction and control.
Defence Procurement and Sustainment Review (Mortimer Review)	In September 2008, the Defence Procurement and Sustainment Review was published providing an independent review of the DMO and the effectiveness of Australia's defence procurement systems with the review being chaired by Mr David Mortimer AO. This became known as the Mortimer Review.
Defence Procurement Review 2003 (Kinnaird Review)	In August 2003 the Defence Procurement Review 2003 published its findings on the problems associated with major Defence acquisition projects with the review being chaired by Mr Malcolm Kinnaird. This became known as the Kinnaird Review.
DEFPUR 101	DEFence PURchasing (101) contracting template used prior to the formation of the DMO.
Final Materiel Release (FMR)	A milestone that marks the completion and release of DMO Acquisition Project Supplies required to support the achievement of the Final Operational Capability (FOC).
Final Operational	The point in time at which the final subset of a capability system that can be operationally employed

Capability (FOC)	is realised. It is a capability state endorsed at project approval at Second Pass, and reported as having been reached by the Capability Manager.
Financial Management and Accountability Act 1997	The FMA Act establishes the regulatory framework for financial management within public sector agencies, including the DMO.
Firm Price Contract	A firm price contract is unalterable in all respects for the duration of the contract, except where the parties agree to a contract amendment which alters that contract price.
First Pass Approval	The process that gives Government the opportunity to narrow the alternatives being examined by Defence to meet an agreed capability gap. First Pass approval allocates funds from the Capital Investment Program to enable the options that Government endorses to be investigated in further detail, with an emphasis on detailed cost and risk analysis.
Forward Estimates	The level of proposed expenditure for future years (based on relevant demographic, economic and other future forecasting assumptions). The Government requires forward estimates for the following three financial years to be published in each annual Federal Budget paper.
Function and Performance Specification	A specification that expresses an operational requirement in function and performance terms. This document forms part of the Capability Definition Document.
Fundamental Inputs to Capability	The standard list for consideration of what is required to generate capability, comprising organisation, personnel, collective training, major systems, supplies, facilities, support, and command & management. It is to be used by Defence agencies at all levels and is

	designed to ensure that all agencies manage and report capability, using a common set of management areas.
Initial Materiel Release (IMR)	A milestone that marks the completion and release of DMO Acquisition Project Supplies required to support the achievement of the Initial Operational Release (IOR).
Initial Operational Capability (IOC)	A point in time at which the first subset of a capability system that can be operationally deployed is realised. It is a capability state endorsed at project approval at Second Pass, and reported as having been reached by the Capability Manager.
Initial Operating Release (IOR)	The milestone at which the Capability Manager is satisfied that the initial operational and material state of the capability system-including any deficiencies in the fundamental input capability-are such that it is sufficiently safe, fit for service and environmentally compliant to proceed into a period of operational test and evaluation leading to an endorsed capability state
Major Capital Acquisition Project	A Defence project that meets one or more of the following criteria: a. it has an estimated total one-time cost of bringing the capital equipment concerned into operation of $A 20 million or more; b. the unit cost of an individual item in a multi-item acquisition is estimated at $A 1 million or more; and/or c. the project is strategically important and/or has significant Defence policy or joint Service implications.
Materiel Acquisition Agreement	An agreement between Defence and the DMO which states in concise terms what services and products the DMO (as a supplier) will deliver, for how much and when.

Materiel Capability Performance Measures	The traffic lights, based on a subjective assessment, indicate: • **Green:** Materiel Capability Performance measures for which there is a high level of confidence that they will be met; • **Amber:** Materiel Capability Performance measures that are under threat but still considered as manageable and able to be met; and • **Red:** Materiel Capability Performance measures that at this stage are unlikely to be met.
Materiel Sustainment Agreement	Materiel Sustainment Agreements will be between the Capability Managers and the Chief Executive Officer of the DMO. These agreements will cover the sustainment of current capability, including services such as repairs, maintenance, fuel and explosive ordnance.
Memorandum of Understanding (MOU)	A memorandum of understanding is a document setting out an agreement, usually between two Government agencies.
Minor Capital Acquisition Project	A Defence project in which the proposed equipment falls within the definition of capital equipment but does not meet the criteria in the definition of a major project.
Off-the Shelf	A product that is available for purchase, which has been delivered to another military or Government body or commercial enterprise.
Operational Concept Document	The primary reference for determining fitness-for-purpose of the desired capability to be developed. This document forms part of the Capability Definition Document.

Operational Test and Evaluation (OT&E)	Test and evaluation conducted under realistic operational conditions with representative users of the system, in the expected operational context, for the purpose of determining its operational effectiveness and suitability to carry out the role and fulfil the requirement that it was intended to satisfy.
Outcomes	The results that the Government, and Defence as the purchaser, seek from the DMO and which are achieved by the successful delivery of its products and services.
Output	The product or service produced by the DMO on behalf of the Government and Defence.
Platforms	Refers to air, land, or surface or sub-surface assets that are discrete and taskable elements within the ADF.
Portfolio Budget Statement	A document presented by the Minister to the Parliament to inform Senators and Members of the basis for Defence/DMO budget appropriations in support of the provisions in Appropriation Bills 1 and 2. The statements summarise the Defence/DMO budget and provides detail of outcome performance forecasts and resources in order to justify agency expenditure.
Prescribed Agency	A prescribed agency is an agency established by regulation under the *Financial Management and Accountability Act 1997*. It provides financial management authority to, and requires accountability by, the Chief Executive of an agency.
Prime System Integrator	The entity that has prime responsibility for delivering the mission and support systems for the project.
Project Executive Summary and Status Outline	A summarisation of the project's status, challenges it faces and its performance.

Project Management Stakeholder Group	A group representing the key stakeholders in a project that meets periodically to review the status of the project, advise senior executives of issues and provide guidance to the Project Manager.
Project Maturity Score	A means of measuring the maturity against benchmark measures of a project at defined milestones.
Risk Management	At the highest level, it involves the identification and mitigation of those risks that have the potential to affect adversely the achievement of agreed output performance at the agreed price.
Second Pass	The final milestone in the requirements phase at which point Government endorses a specific capability solution and approves funding for the acquisition phase.
Service Customer	The Defence Group that is the end user of products and services delivered by the DMO.
System Program Office	One of the core business units in the DMO. They provide a crucial link between the DMO and its customers. They provide acquisition and sustainment services to the ADF.
Test Concept Document	The basis for the DMO's development of the Test and Evaluation Master Plan for a project, and is the highest level document that considers test and evaluation requirements within the capability systems' life-cycle. This document forms part of the Capability Definition Document.
Two pass approval process	The process by which major capital investment proposals are developed for consideration and approval by the Government.

Type of Capability	'New' – a capability that has not previously existed in the ADF. 'Replacement' – a current capability that is being replaced by a more up to date technology or to respond to a changing threat. 'Upgrade' – an upgrade to existing capability.
Variable Price Contracts	Variable price contracts provide for the contractor to be paid a fixed fee for performance of the contract, subject to certain variations detailed in the contract. Variable price contracts may allow for variations in exchange rates, labour and/or material costs.
Verification and Validation	Validation is the proof through evaluation of objective evidence that the specified intended end use of a product or system is accomplished in an intended environment. Validation is confirmation by examination and provision of objective evidence that specified requirements to which a product or service, or aggregation of products and services, is built, coded, assembled and provided have been fulfilled.

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ANAO Audit Report No.6 2012–13
Management of Australia's Air Combat Capability—F-35A Joint Strike Fighter Acquisition
Department of Defence
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ANAO Audit Report No.7 2012–13
Improving Access to Child Care—the Community Support Program
Department of Education, Employment and Workplace Relations

ANAO Audit Report No.8 2012–13
Australian Government Coordination Arrangements for Indigenous Programs
Department of Families, Housing, Community Services and Indigenous Affairs

ANAO Audit Report No.9 2012–13
Delivery of Bereavement and Family Support Services through the Defence Community Organisation
Department of Defence
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ANAO Audit Report No.10 2012–13
Managing Aged Care Complaints
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Establishment, Implementation and Administration of the Quarantined Heritage Component of the Local Jobs Stream of the Jobs Fund
Department of Sustainability, Environment, Water, Population and Communities

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Administration of Commonwealth Responsibilities under the National Partnership Agreement on Preventive Health
Australian National Preventive Health Agency
Department of Health and Ageing

ANAO Audit Report No.13 2012–13
The Provision of Policing Services to the ACT
Australian Federal Police

ANAO Audit Report No.14 2012–13
Delivery of Workplace Relations Services by the Office of the Fair Work Ombudsman
Education, Employment and Workplace Relations
Office of the Fair Work Ombudsman

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