Network Manager
nominated by
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EUROCONTROL

Network Operations Report – Annual 2012

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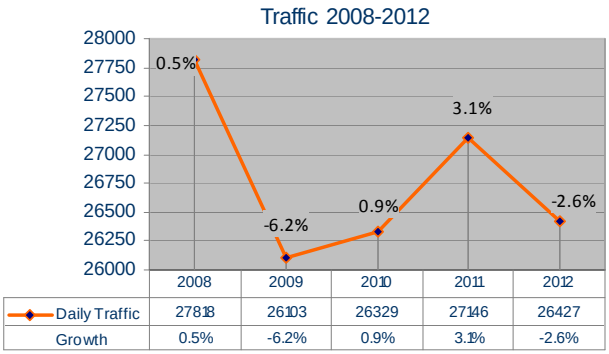
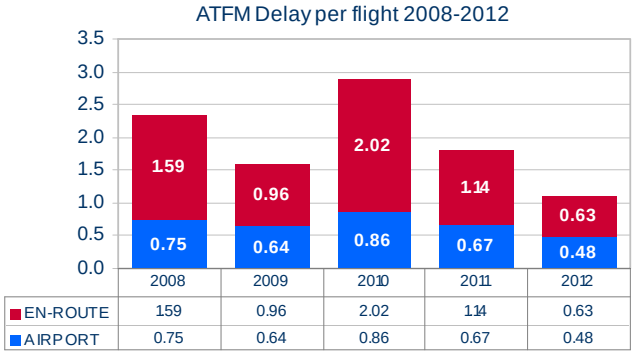
I. EXECUTIVE SUMMARY

The European ATM network in 2012 saw a progressive decline in traffic. Some growth took place in the south eastern, eastern and northern part of the network namely in Turkey, Norway, Poland, Ukraine and Estonia but a larger contraction in the rest of the network cancelled off this growth and brought the traffic down to levels similar to 2010 with a drop of 2.6%[1] on last year. Total ATFM delays reduced by 40% on last year giving a yearly average of 1.1 minutes of delay per flight. A relatively high number of industrial actions spread over 41 days, social difficulties in Norway and Portugal, capacity problems in Cyprus, Barcelona, Marseille and Langen ACCs and two major sporting events during the summer (2012 European Football Championship and London Olympics and Paralympics) were the challenges in 2012. Despite these, the average en-route ATFM delay per flight reduced from 1.14 minutes in 2011 to **0.63 minutes** in 2012. Summer en-route delay average was 0.79 minutes per flight, which is the lowest ever summer delay and also below the historical PC target of 1.0 minute per flight. Airport ATFM delay average also reduced by 0.19 minutes on last year, giving 0.48 minutes per flight in 2012:





1 January 2012 was also the start of the first performance reference period (RP1) of the Single European Sky Performance Scheme during which the annual en-route ATFM delay average is targeted to reduce to 0.5 minute per flight by 2014. In accordance with this requirement, the Performance Review Body (PRB) recommended interim delay targets (also known as "*reference value*" or *"delay target"*) of **0.7** minutes for 2012 and 0.6 minute per flight in 2013. Additionally, NM had an objective of further reducing the forecast en-route delays by 10%[2]. The corresponding delay reductions achieved by tactical NM actions in 2012 is approximately 10.7% of the total en-route delay, which equates to **0.08** minutes per flight. With 0.63 minutes of average en-route delay per flight in 2012, the network met its first interim delay target of 0.7 minutes, and 0.08 minutes saved by NM actions can be seen as NM's direct contribution to this result.

For airports, the declining traffic in 2012 together with the improvements achieved at 2011 hot spots, namely Frankfurt and Greek holiday destination airports, resulted in lower airport delays compared to last year. Against this trend were **London Heathrow** which had adverse weather constraints, **Istanbul Atatürk** which faced a traffic increase of around 12% and **Zurich** that had environmental constraints. **London Heathrow** also became the 5th fully implemented A-CDM airport along with Munich, Brussels, Paris Charles De Gaulle and Frankfurt airports but due to local issues at Heathrow, this had to be suspended in July 2012.

Improvements in flight efficiency delivered an average daily saving of 3900 nautical miles with a reduced route extension at the flight planning phase from 4.73% in 2011 to 4.64% in 2012, reaching a lowest ever level at 4.53% in August 2012. The airspace design target was met with route extension due to airspace design reaching an annual average of 2.96%. 16 additional airports implemented Continuous Descent Operations (CDO) in 2012, during some parts of day or night. This makes a total of 87 airports that introduced CDO by end of 2012. The aim is to reach 200 airports with CDO by 2014.

In summary, traffic dropped sharply by 2.6% in 2012 while the ATFM delays also reduced significantly and the network capacity increased by 6% compared to 2011. The progress of the other performance indicators has been positive. Strikes and social issues (staff availability and social unrest) continued to be the main bottleneck for the network. The efforts at Network Manager level kept the delays at minimum during such events but delay mitigation initiatives particularly during the strikes are counter productive for flight efficiency and environmental indicators.

1 Based on NM Area, average number of daily flights, not the total flights, since 2012 was a leap year.

2 Network Manager Performance Plan (NMPP) 2012-2019.

II. INTRODUCTION & SCOPE

Although the summer period is the main factor influencing the ATM network performance in a year, the purpose of this document is to provide further information on the European ATM network performance in 2012 in the areas of traffic evolution, Air Traffic Flow Management delays, the capacity offered by the Air Navigation Service Providers and flight efficiency. In addition, the views of the airspace users on the network operations in 2012 are also included.

The report analyses the annual results in light of the main events that took place in the course of the year.

Based on the obtained results, identified gaps, the expectations of the airspace user, and the performance and compliance targets set for the next period, the report provides a conclusion section with the prospects for the next year.

Section 1 gives an overview of the yearly performance results at European ATM Network level for traffic, ATFM delay, capacity and flight efficiency.

Section 2 provides a more detailed analysis of the results including the individual ACC and airport performances.

Section 3 covers the view of the Airspace Users on the network performance and their expectations for the next year.

Section 4 gives the current compliance status of the network to the ATFM IR, SES II Performance Scheme (RP1).

Section 5 summarises the outcome of the yearly performance with conclusions.

Annex I provides a summary of traffic and capacity evolution for each ACC.

Annex II gives relevant information on the airports which caused a significant impact to the network or where relevant improvements were achieved during 2012.

SECTION 1: NETWORK OVERVIEW

1.1. 2012 In Brief

2012 started with lower traffic levels following a trend observed since the beginning of 2011-2012 IATA winter season in November 2011. In parallel to reduced traffic, delays were also low. COOPANS system upgrade in Malmo, reduced capacities in Ankara ACCs due to Baghdad FIR interface and re-opening of the Libyan airspace that was closed to civilian traffic since March 2011 were the main events in **January**.

In **February**, a European wide industrial action (ETUC) followed by French ACCs and several strikes by Frankfurt airport apron and marshalling personnel had a major impact on the network. With large numbers of flight cancellations during Frankfurt airport strike, February saw exceptionally low traffic levels with a 4.7% drop on February 2011.

March saw a series of industrial actions in Cyprus, France, Germany (Frankfurt airport, non-ATC), Portugal and Spain spread over 10 days. Although these strikes did not have major delay impact, they caused an estimated 1000 flight cancellations.

April started with a major industrial action in France (2-3 April) that had severe consequences at network level with over 400.000 minutes of delay and approximately 5000 cancelled flights; the critical timing of the strike in busy Easter week reduced airlines' ability to recover from the disruption. This single event was the most serious risk for the network in 2012 for the annual delay target.

There were also two Portuguese strikes on four days in April with medium-low and mainly local impact.

In **May** there were three more industrial actions in Portugal spread on five days, as well as the restructuring of the Spanish airspace that had some local impact. Without any big scale disruptions at network level, the month produced favourable performance results with low delays.

Starting with **June,** the seasonal summer traffic in conjunction with the additional **EURO 2012** European Football Championship flights halted the ongoing traffic decline. EURO 2012 hosting states Poland and Ukraine saw record high traffic levels but the event was handled effectively and caused no detrimental effect to the network. Despite Oslo social situation that became a hot spot during the month, June produced favourable performance results with 47% less delay on last year

July and **August** also had slower traffic decline with additional **2012 London Olympics** and **Paralympics** flights. Similar to EURO 2012, Olympic Games had no detrimental impact on the network. The main bottlenecks of the network during these peak summer months were the capacity and staffing issues at Langen, Barcelona, Marseille, Warsaw and Nicosia ACCs as well as the social issues in Oslo ACC. Thunderstorms in Germany and Spain and the lack of parking slots at Frankfurt airport on 31 August due to a Lufthansa strike also had significant impact on the operations but the overall network delay was still around half of the same period of the previous year.

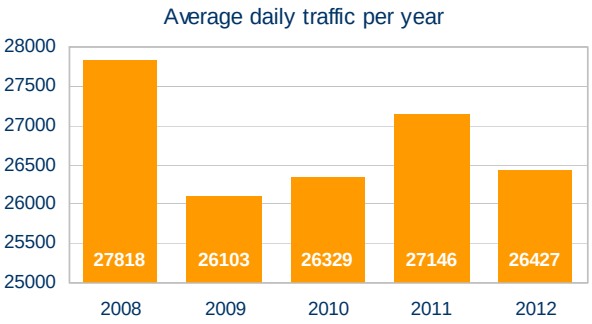
In **September** traffic fell by 3%. Two Lufthansa strikes with approximately 1000 flight cancellations and an ATC industrial action followed by a radar failure in Greece contributed to this drop. Although the capacity situation in Nicosia ACC improved with the introduction of a new 4th sector in the second half of August, staffing problems in conjunction with high traffic levels in Langen ACC and an unexpected capacity reduction in Marseille ACC due to early introduction of winter configurations generated significant en-route ATFM delay.

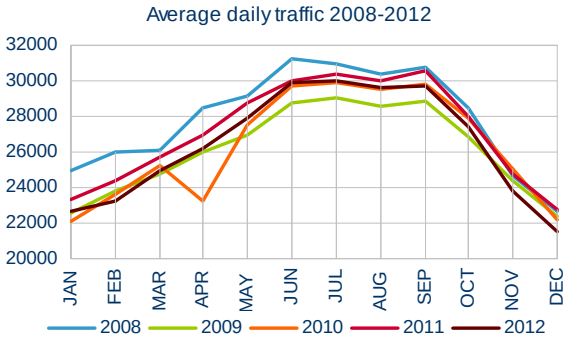
October saw more industrial actions in Greece and France. The ongoing social situation in Portugal became the predominant network issue. The French strike and the Portugal social issues affected Spain with rerouted traffic. Hurricane Sandy hit the east coast of America; it impacted the Europe and North Atlantic by around 1000 fewer flights but caused no ATFM delays in Europe. NM applied extensive mitigation actions for Portugal social situation throughout the month.

November saw 3.6% drop in traffic and was the lowest November traffic for the past five years. The European day of action on 14 November followed in Spain, Portugal and France and a separate industrial action in Marseille ACC on 15 November caused around 1750 flight cancellations. Langen capacity and staffing problems also continued in November.

The highest traffic reduction of the year occurred in **December** by -5.6%. Like November, December 2012 had the lowest traffic level for the corresponding month in the last five years. With the seasonal change in weather and traffic, the airports became the main network issue although the delays stayed at low levels. The month saw several planned events in Germany (VOLMUK), Finland (Free-route airspace), France (paperless strip system trial and IRP airspace design) and shadow operations in Budapest and Bratislava. With 0.63 minutes of average en-route delay per flight and in accordance with RP1 requirements, the network met its interim delay target in 2012.

1.2. Traffic

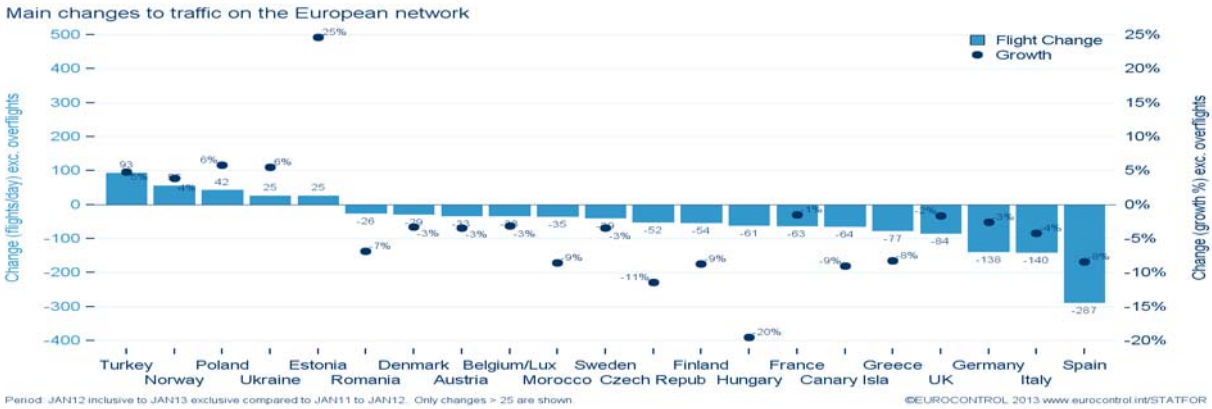




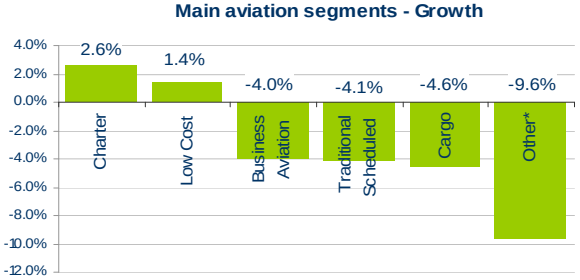
The traffic forecast for 2012 was 2.2%[3] growth (October 2011 forecast). Following the poor economic outlook, this forecast was revised downwards three times in 2012: in February to -1.6%, in May to -1.9% and in December to -2.5%. The actual result was a reduction of 2.6%.

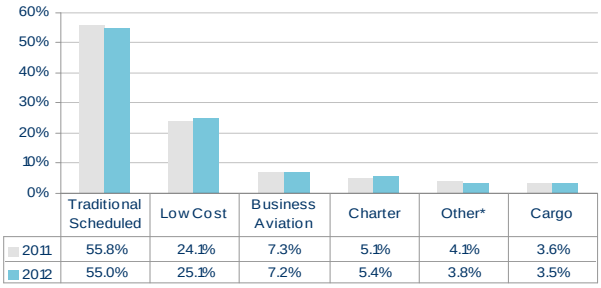
For a big part of the year, the average daily traffic levels were similar to 2010 levels - apart from April (Ash Cloud dip in 2010) and in November and December where the traffic demand had been the lowest of the last 5 years.

Traffic dropped in all states except in Turkey, Norway, Poland, Ukraine and Estonia. Turkey being the main contributor, these five states all together added around 240 more flights per day (excluding overflights) to the network. This increase was offset by reductions in the busiest countries: Spain lost around 290 flights per day, followed by Italy and Germany each lost just under 140 flights per day.



Passenger demand continued to increase by 5.3% in 2012 with a near record level load factor of 80% (source IATA). This absorption of passenger demand was part of air-carriers strategy to increase the profitability of flights in less favourable economic environment, as well as reducing the flights.





Compared to 2011, charter and low-cost segments were the only ones that grew (+2.6% and 1.4% respectively). The Traditional Scheduled segment, accounting for more than half of the flights in Europe, contracted by 4.1% while the Business Aviation and All-Cargo also experienced declines of around 4% in 2012 (year-on-year).

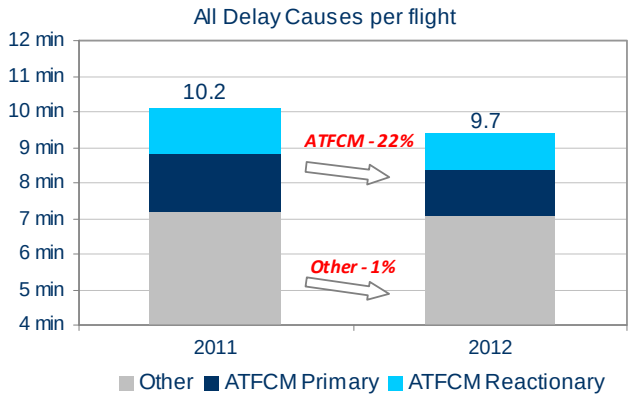
Market shares of the main aviation segments did not change drastically; Traditional Scheduled carriers lost around 1 percentage point to Low Lost carriers.

3 Based on NM Area, average number of daily flights, not the total flights, since 2012 was a leap year.

1.3. Delays

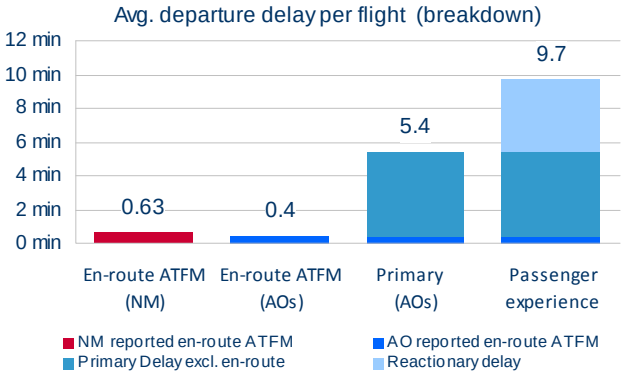
1.3.1. All Air Transport Delays (Airline View)

This section presents the all air transport delay situation as seen from the airlines by using the data collected by Central Office for Delay Analysis (CODA) from the airlines. Data coverage is 68% of the commercial flights in the ECAC region for 2012. ATFM delays reported by airlines are lower than the NM calculated ATFM delays due to difference in methods: ATFM delays of NM are the (flight) planned "delays"; the airlines report the "actual" experienced ATFM delay on departure. For instance, a flight with an ATFM delay may also have a handling delay absorbed within the ATFM delay. For the airline, a part of this delay is the ATFM delay and the rest is the handling delay.



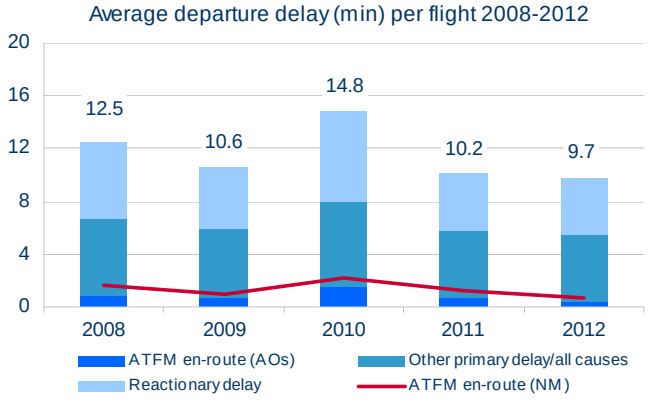
Based on airline data, the average departure delay per flight from "All Causes" was 9.7 minutes per flight, a fall of 5% in comparison to 10.2 minutes in 2011. Within all air transport delays, en-route ATFM delays reduced from 0.7 minutes/flight to 0.4 minutes per flight (a fall of 39%) with overall ATFM delays (en-route + airport) decreasing by 22% from 1.3 minutes per flight in 2011 to 1.0 minutes per flight in 2012.

Non-ATFM delays reduced slightly with the average delay per flight dropping by 1% year on year.



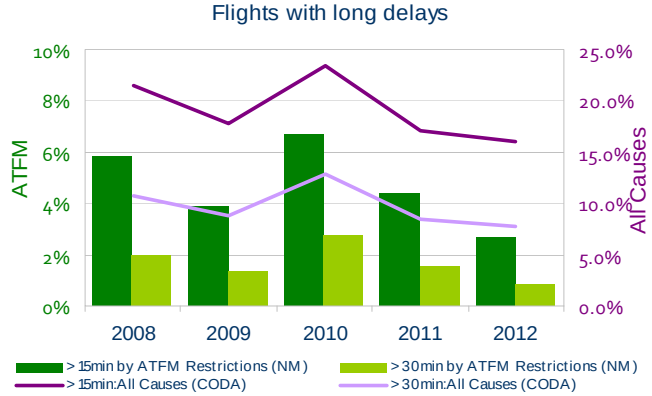
The average en-route ATFM delay reported by air carriers was 0.4 minutes per flight, which is lower than the NM reported average en-route ATFM delay of 0.63 minutes per flight (the difference between airline and NM reported en-route delays comes from different delay attribution methods described above).

According to airline reports, primary delays counted for 56% (5.4 min/flt of which 0.4 minutes is attributable to en-route ATFM delays) with reactionary delays representing a 44% share (4.3 min/flt).



The average delay per flight from all delay causes decreased by 5% from 10.2 minutes to 9.7 minutes in 2012. This is the lowest level recorded over the last five years. This reduction came directly from reduced reactionary and en-Route ATFM delays, both of which dropped by 0.3 minutes per flight compared to 2011.

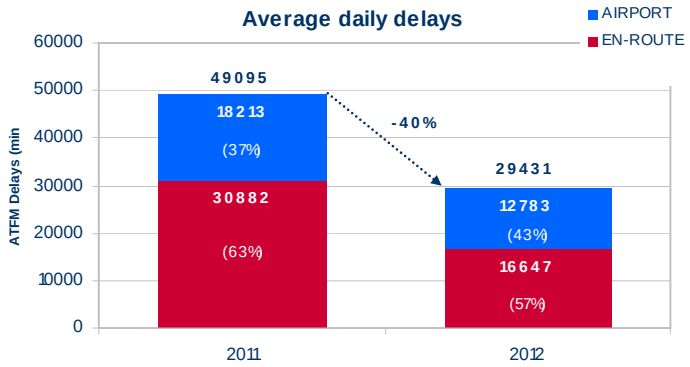
The share of the reactionary delays remained at 45% while the share of en-route ATFM delays in delay all causes dropped from 7.0% in 2011 to 4.5% in 2012.



The percentage of flights delayed by long ATFM delays (those exceeding 15 minutes and 30 minutes) reduced to 2.7% and 0.9% respectively in 2012. Corresponding figures in 2011 were 4.4% and 1.6%. The 2012 NMPP objectives for the proportion of flights delayed more than 30 min is 1%, which was achieved.

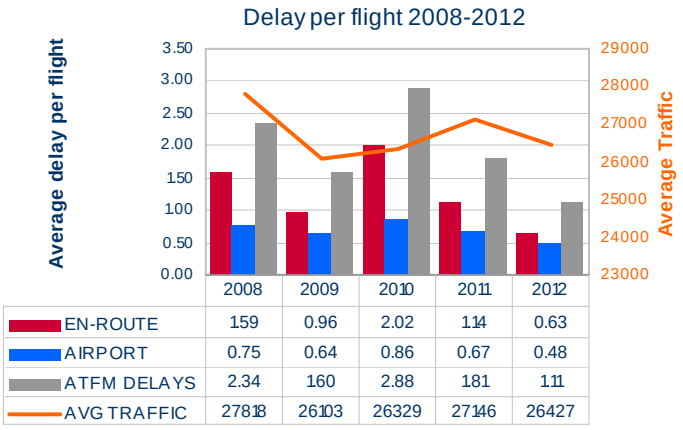
The percentage of flights with long delays due to all-causes (those exceeding 15 & 30 minutes) also reduced to 16.0% and 7.7% respectively. Corresponding figures in 2011 were 17.1% and 8.4%.

1.3.2. ATFM Delays (ATM View)



Total ATFM delays decreased by **40%** compared to 2011.

En-route ATFM delays reduced by 46%, while airport ATFM delays reduced by 30%.

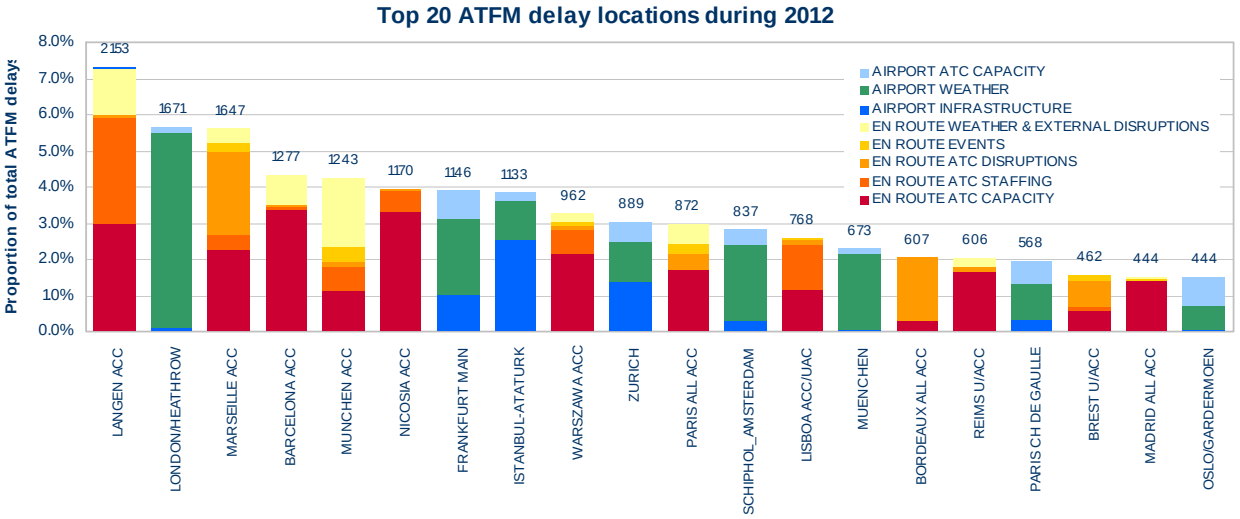


	2008	2009	2010	2011	2012
EN-ROUTE	1.59	0.96	2.02	1.14	0.63
AIRPORT	0.75	0.64	0.86	0.67	0.48
ATFM DELAYS	2.34	1.60	2.88	1.81	1.11
AVG TRAFFIC	27818	26103	26329	27146	26427

2012 had the lowest ATFM delays of the last 5 years. The average ATFM delay per flight reduced from 1.8 minutes in 2011 to 1.1 minutes in 2012.

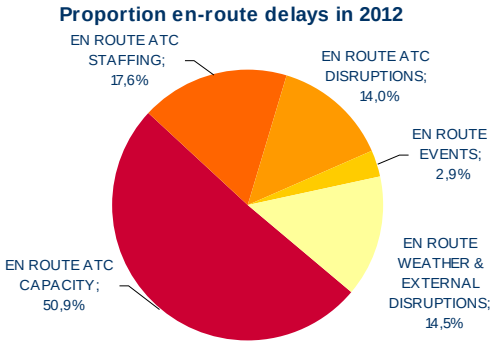
En-route ATFM delay per flight was almost halved (1.11 minutes in 2011 vs. 0.63 minutes in 2012) while reduction in airport ATFM delays was 0.19 minutes per flight.

The ATFM delays have reduced continuously since 2010.



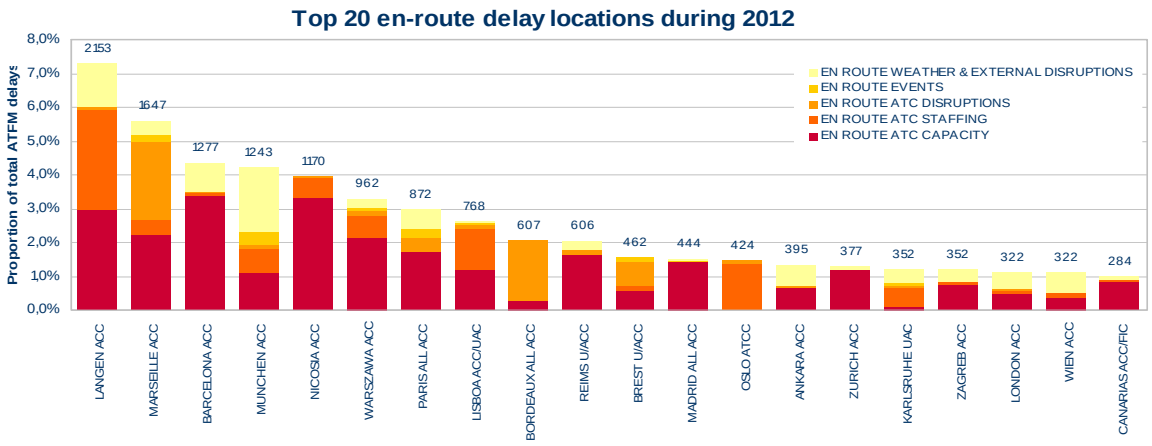
The top 20 delay locations generated 67% of all ATFM delay in 2012. The top 8 locations, namely Langen, Marseille, Barcelona, Munich and Nicosia ACCs, London Heathrow, Frankfurt and Istanbul Ataturk airports generated 39% of the total network delay.

1.3.3. En-Route ATFM Delays



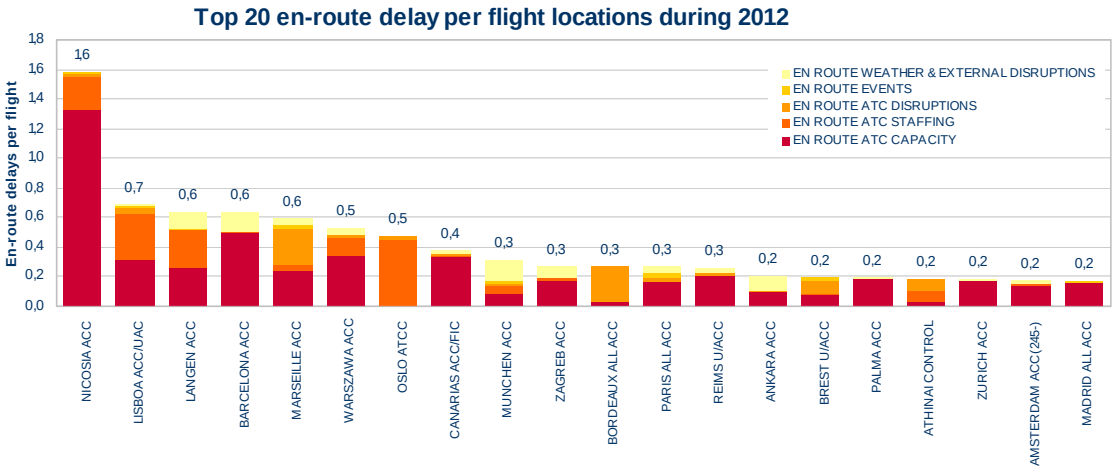
In 2012, the proportion of en-route ATC capacity and staffing delays within all ATFM delays was 68.5%. The proportion in 2011 was 80%.

Events such as weather, industrial actions and other disruptions caused 32.5% of all ATFM delays.



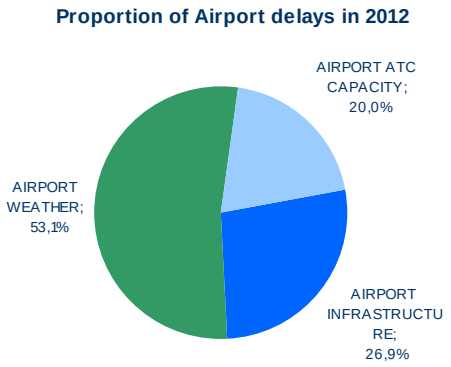
Based on the average daily en-route delay, Top 20 delay locations generated 51% of all en-route delay in 2012. The corresponding proportion in 2011 was 90%.

The top five locations Langen, Marseille, Barcelona, Munich and Nicosia ACCs generated 25% of all delay.



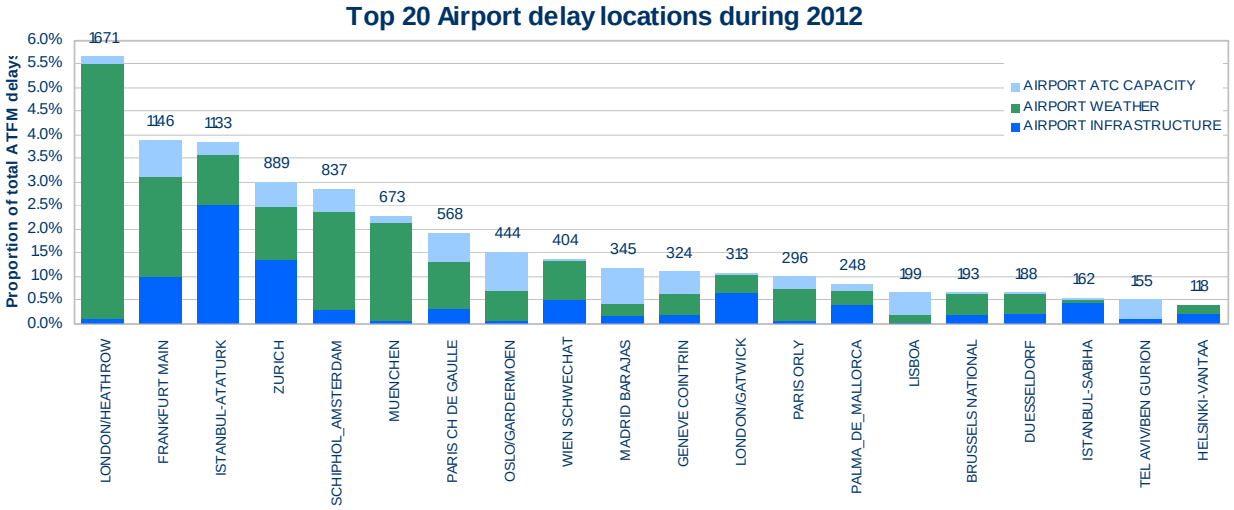
Nicosia ACC had the highest en-route delay average per flight with 1.6 minutes.

1.3.4. Airport/TMA ATFM Delays

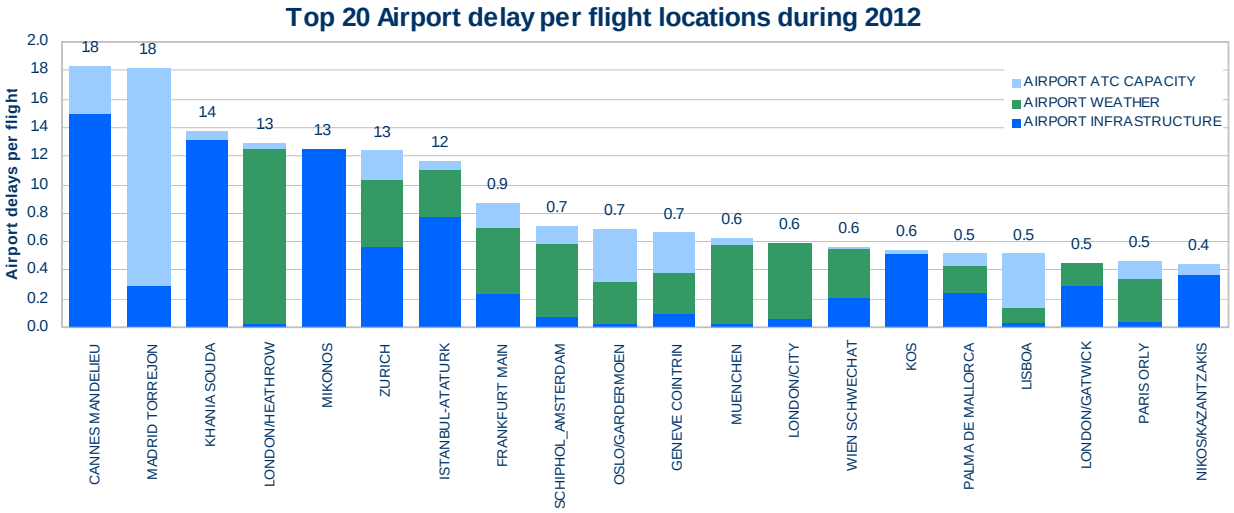


More than half of all Airport/TMA ATFM delay in 2012 was caused by weather issues.

The proportion of Airport ATC capacity delays remained as 20%. The proportion of weather related delays increased from 49% in 2011 to 53% while Airport Infrastructure delays reduced from 31% in 2011 to 27% in 2012.

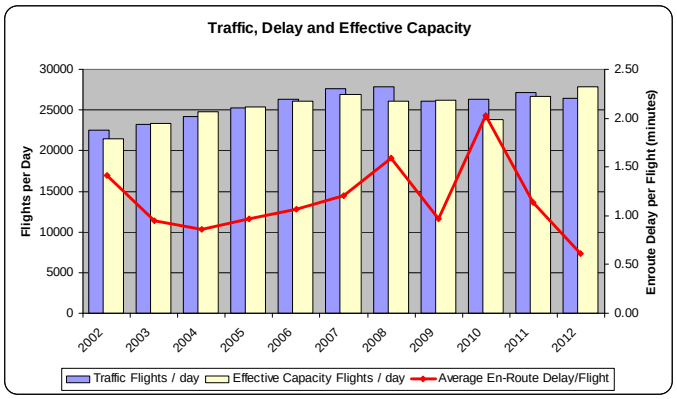


London Heathrow was the highest delay generating airport of the network due to adverse weather conditions, particularly in the second half 2012.



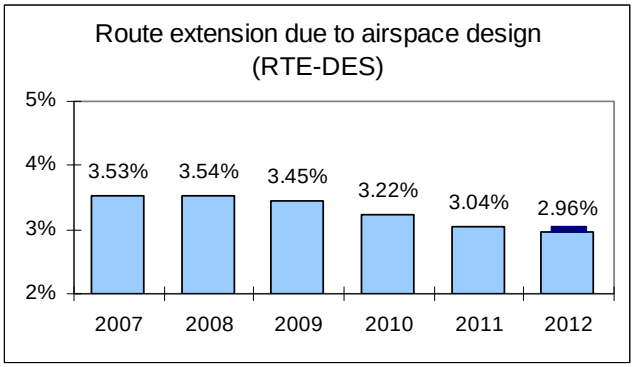
The overall reduction in airport delays in conjunction with the improvements achieved at certain airports (e.g. Frankfurt, Greek holiday destination airports) led to a significant drop in the average airport delay per flight. The highest airport delay per flight was 1.8 minutes at Cannes Mandelieu airport compared to 6.9 minutes at Kos airport in 2011. Among the major hubs, London Heathrow had the highest delay in 2012 with 1.3 minutes per flight while the corresponding result in 2011 was 2.5 minutes per flight at Frankfurt airport.

1.4. Capacity

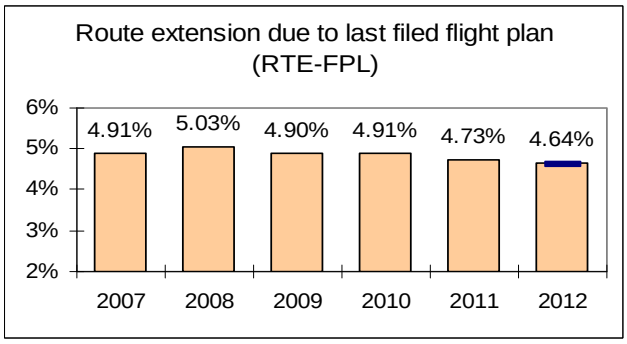


In 2012 the effective capacity indicator increased by 6% over the whole European ATM network (an increase of 9% for the Summer season), when compared to the corresponding periods of 2011. In 2012, the European network reached the highest capacity ever recorded. The capacity at European level is quantified using the "effective capacity[4]" indicator of the Performance Review Commission (PRC).

1.5. Flight Efficiency



The average route extension due to airspace design decreased from 3.04% in 2011 to 2.96% in 2012, meeting the annual target of 3% in 2012. It reached a historically low level in August 2012 and allowed a potential average savings of nearly 4700 NM per day.



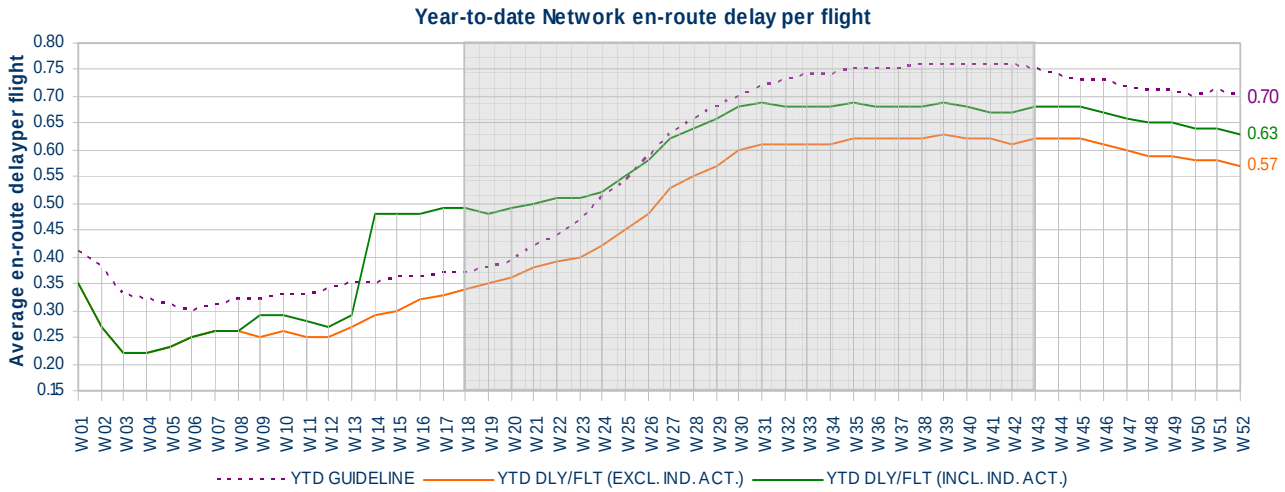
The average route extension based on the latest filed flight plan reduced from 4.73% in 2011 to 4.64% in 2012, slightly missing the annual target of 4.6% by 0.04%, delivering an average daily saving of 3900 NM (or 1.41 million NM per year). The lowest level ever was reached in August with 4.53%.

The 2012 route extension performance target was missed mainly due to the capacity shortfalls during the ATC strikes or with the reduced capacities in some centres leading to re-routings to avoid such areas.

[4] *This indicator, described in PRR 5, Annex 6, takes into account both traffic and enroute delay evolution.*

SECTION 2: PERFORMANCE ANALYSIS

2.1. Disruptions and en-route delay evolution



In 2012 network suffered from wide spread ATC and non-ATC strikes. The first major strike occurred in February at Frankfurt airport, which was a non ATC and non en-route nature but nevertheless caused a major disruption for the network operations due to its long duration and high number of flights it affected. The Frankfurt airport strike was followed by an ATC strike in France that generated high en-route delays and pushed the year-to-date (YTD) delay average above the reference target level at the time (Week 09).

The second and most major impact occurred at the beginning of 2-4 April with another French ATC strike. This single event pushed the YTD delay average by **0.2** minutes per flight, from 0.29 minutes in Week 13 to 0.48 minutes in Week 14. It took the network 11 weeks to recover from this exceptional jump; by mid June the YTD network delay average was back on the upper boundary of the safe margin (Week 14-25).

The next set of strikes occurred in Portugal from end March to end May on 11 days, signaling a possible social unrest. Although these strikes had moderate delays at network level (Week16-21), due to their complex nature of several short strike periods in a day, they required heavy coordination and planning at network level.

From end May until September the network had no disruptions but the social issues in Oslo and Portugal became more pronounced with reduced capacities due to staffing. Two major sporting events, EURO 2012 and Summer Olympics had no detrimental effect on the network performance; on the contrary, the extra effort put by the hosting and the neighboring ACCs in conjunction with the plans at network manager level kept the delays lower than the seasonal norms.

From September until the end of the year, a major equipment failure in Greece on 29 September (Week 39), ATC strikes in France on 23-24 October and 15 November and intensified social issues in Portugal kept the delays relatively high. Consequently, the decline that is expected in YTD delay average at the end of the summer season did not happen in 2012 (Week 42-47). However, the earlier good performance of the network especially after July (Week 31-42), kept the YTD en-route delay per flight average stay on track.

In total there were 30 unplanned events in 2012 that impacted the network in varying degrees on 50 days. It is estimated that these disruptions caused a total of 14.000 flight cancellations. Delay caused by all disruptions (strikes and technical failures) caused 0.07 minutes of en-route delay per flight. This is 12% of the annual average of 0.63 minutes per flight.

A full list of strikes and major disruptions in 2012 is given in the table below:

Event	Date	Impact on Traffic*	Impact on Delays
French (LFMM) strike	15 Nov	-250 flights	49251 min: 71% of the daily NW delay
European strike	14 Nov	-1400 flights in LE, LF & LP	5098 min: 38.5% of the daily NW delay
Greek strike	06 Nov	None	617 min: 4.7% of the daily NW delay
French strike	23-24 Oct	Negligible airline specific impact	69,300 min: 34% of the daily NW delay
Greek strike	18 Oct	-40 flights	1403 min: 6% of the daily NW delay
Greek radar outage	29 Sep	-280 flts in LG, +225 in LB & LT	35,788 min: 40% of the daily NW delay
Greek strike	26 Sep	-274 flights in LG	4,700 min: 12% of the daily NW delay
Lufthansa strike	07 Sep	-900 flights	None
Lufthansa strike	04 Sep	-350 flights	1,767 min: 7% of the daily NW delay
Lufthansa strike	31 Aug	-200 flights	10,866 min: 22% of the daily NW delay
Turkish Airline strike	28-29 May	-254 flights	None
Portuguese strike	24-25 May	-643 flights	18,954 min: 18% of NW delay on 2 days
Portuguese strike	17-18 May	-498 flights	1,723 min: 40% of NW delay on 2 days
Portuguese strike	11 May	-325 flights	8,357 min: 21.2% of the daily NW delay
Portuguese strike	19-20 April	None	10,145 min: 12% of the NW delay on 2 days
Portuguese strike	12-13 April	-60 flights	6,504 min: 15% of the NW delay on 2 days
French strike	2-3 April	-4918 flights	445,783 min: 95% of the daily NW delay on 2 days
Spanish Strike	29 Mar	-501 flights	None
German strike	27 Mar	-497 flights	3,001 min: 21.2% of the daily NW delay
Portuguese strike	22 Mar	None	None
French strike (LFQQ)	22 Mar	None	1,074 min: 10.9% of the daily NW delay
Cyprus strikes	2,3,7,8 Mar	None	3170 min: 3.4% of NW delay on four days
French strike	29 Feb	-465 flights	45,754 min: 60% of the daily NW delay
Iberia strike	17-29 Feb	-40 flights*	none
Frankfurt Airport strike	16-29 Feb	-1519 flights	81,654 min: 40% of NW delays on 8 days
Ben Gurion Airport strike	8 Feb	None	None
Air France strike	1 Feb	-300 flights	None
Belgium strike	30 Jan	-200 flights	None
Cyprus strike	27 Jan	-53 flights	700 min.
BRU Airport strike	20 Jan	None	None

*Estimates are based on the historical data.

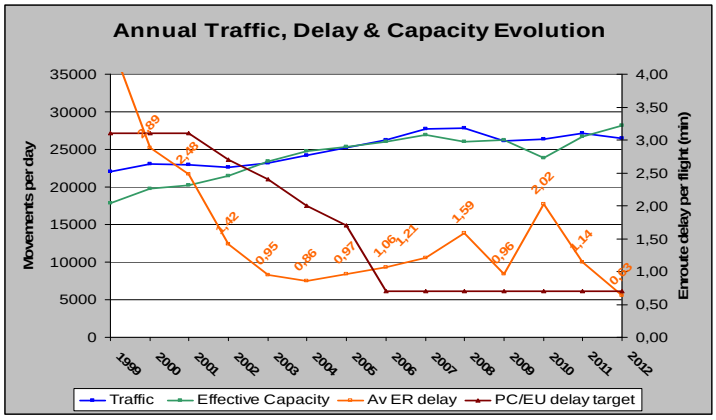
Table 1 - Strikes and disruptions

2.2. Capacity Evolution

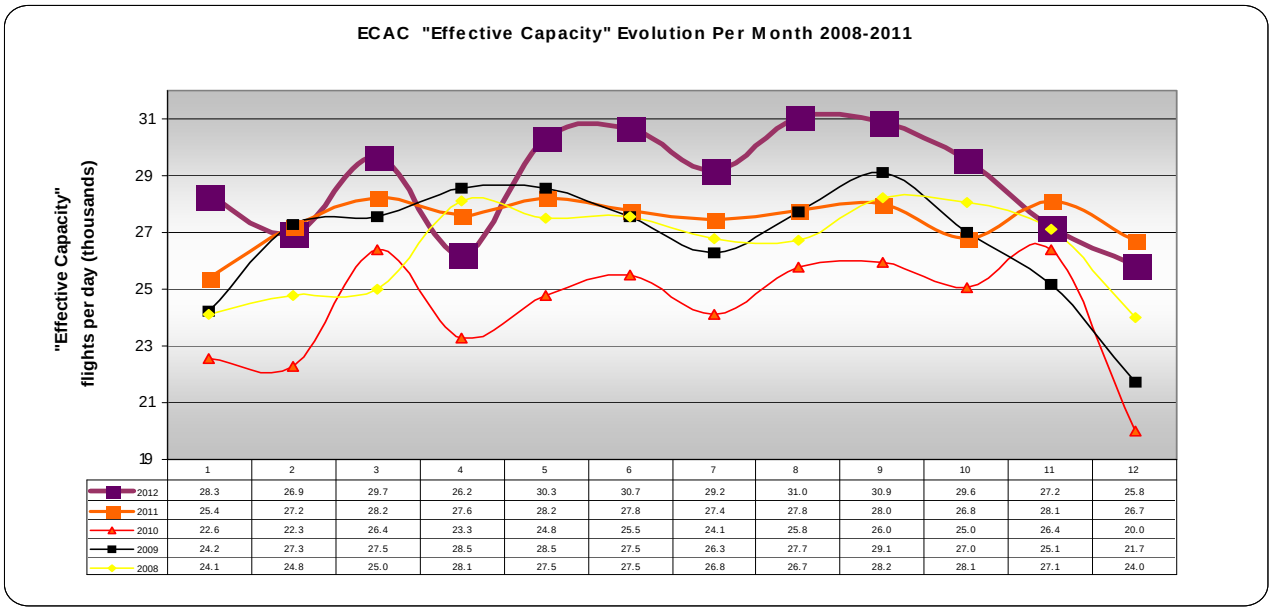
The capacity at European level is quantified using the "effective capacity[5]" indicator of the Performance Review Commission (PRC) that takes into account traffic and delay evolution[6].

Between 1999 and 2012, traffic has increased by 20%, the “effective capacity” of the network has increased by 60% and the average enroute ATFM delay per flight has decreased by 85%.

In 2012 the effective capacity indicator increased by 6% over the whole European ATM network (9% increase for the summer season), when compared to the corresponding periods of 2011. In 2012 the European ATM system capacity reached the highest capacity ever recorded. Actual delay for Summer 2012 was 0.79 minutes per flight enroute, a big improvement over 2011, primarily due to improved NM and ANSP capacity planning and proactive Network Management, in addition to overall traffic reduction.



The "effective capacity” indicator takes into account all significant events: system failures, weather problems, industrial action, implementation of new ATM systems etc. The chart below shows the monthly evolution of the “effective capacity” of the European ATM system since 2008. This indicator was at its highest level ever during the second half of 2012.



	1	2	3	4	5	6	7	8	9	10	11	12
2012	28.3	26.9	29.7	26.2	30.3	30.7	29.2	31.0	30.9	29.6	27.2	25.8
2011	25.4	27.2	28.2	27.6	28.2	27.8	27.4	27.8	28.0	26.8	28.1	26.7
2010	22.6	22.3	26.4	23.3	24.8	25.5	24.1	25.8	26.0	25.0	26.4	20.0
2009	24.2	27.3	27.5	28.5	28.5	27.5	26.3	27.7	29.1	27.0	25.1	21.7
2008	24.1	24.8	25.0	28.1	27.5	27.5	26.8	26.7	28.2	28.1	27.1	24.0

There was a considerable improvement at Network level over 2011 and even though delays remained high at some ACCs, the performance of a significant number was better than had been foreseen in the ACC capacity plan and delay forecast as explained in the following section.

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5 *This indicator, described in PRR 5, Annex 6, takes into account both traffic and enroute delay evolution.*

6 *One minute per flight in the summer season equates to 0.7 minutes annual average enroute delay per flight.*

2.3. ACCs

The NOP 2012 included for 2012 the following information:
1) The reference breakdown value per ACC required to reach the interim network delay target of 0.7 minutes per flight (*Target*),
2) The delay forecast per ACC based on the ACC capacity plans as agreed in NOP, which would produce an annual delay average of 0.45 min/flt for the network (*Forecast*).

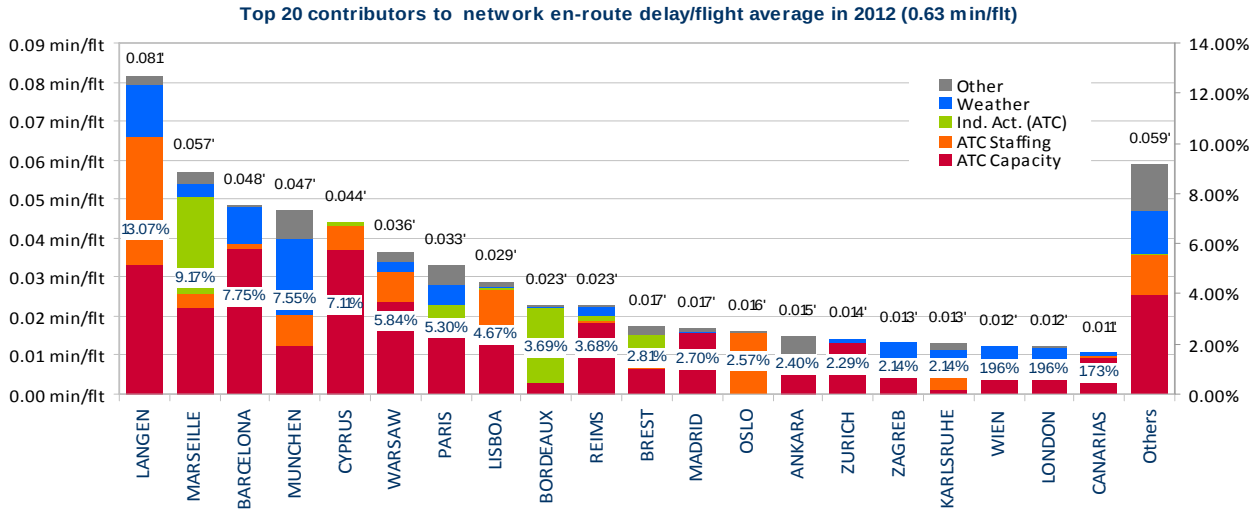
The ACCs that exceeded their forecast delay reference significantly (+0.05 min) are indicated in red below:

COUNTRY	ACC	ACC Code	EN-ROUTE DELAY			TRAFFIC			CAPACITY	
			Target	Forecast	Actual	Forecast*	Summer	Annual	NOP Plan	Actual
NETWORK	NETWORK	ALL_DNM	0.70	0.45	0.63	1.6%		-2.6%	6%*	6.0%
ALBANIA	TIRANA ACC	LAAAACC	0.31	0.27	0.06	-2.3%	-0.8%	-1.2%	10.0%	16.0%
ARMENIA	EREVAN ACC	UDDDACC	0.03	0.00	0.00	-0.3%	-3.0%	-1.7%	0.0%	0.0%
AUSTRIA	WIEN ACC	LOVVACC	0.30	0.22	0.16	-0.7%	-1.9%	-2.4%	3.0%	7.0%
AZERBAIJAN	BAKU ACC	UBBAACC	0.11	na	0.00	1.1%	3.6%	7.9%	0.0%	0.0%
BELGIUM	BRUSSELS CANAC	EBBUACC	0.25	0.02	0.03	-1.7%	-1.8%	-2.6%	1.0%	0.0%
BULGARIA	SOFIA ACC	LBSRACC	0.11	0.00	0.00	2.0%	0.3%	0.5%	0.0%	0.0%
CROATIA	ZAGREB ACC	LDZOACC	0.31	0.22	0.27	-0.8%	0.6%	0.2%	10.0%	6.0%
CYPRUS	NICOSIA ACC	LCCCACC	0.93	1.19	1.59	5.0%	-4.2%	-4.1%	10.0%	-11.0%
CZECH REPUBLIC	PRAGUE ACC	LKAAACC	0.15	0.03	0.00	0.2%	-2.9%	-2.4%	2.5%	0.0%
DENMARK	COPENHAGEN ACC	EKDKACC	0.06	0.09	0.00	-1.6%	-4.9%	-4.3%	0.0%	0.0%
ESTONIA	TALLIN ACC	EETTACC	0.11	0.04	0.11	2.4%	5.3%	5.5%	0.0%	2.0%
EUROCONTROL	MAASTRICHT UAC	EDYYUAC	0.30	0.02	0.04	-1.1%	0.1%	-0.1%	2.0%	0.0%
FINLAND	TAMPERE ACC	EFESACC	0.10	0.01	0.02	-5.3%	-10.6%	-8.9%	0.0%	21.0%
FRANCE	BORDEAUX ALL ACC	LFBBALL	0.21	0.02	0.27	0.3%	0.7%	-0.4%	2.0%	0.0%
FRANCE	BREST U/ACC	LFRRACC	0.16	0.03	0.19	-0.9%	-1.7%	-1.5%	2.0%	0.0%
FRANCE	MARSEILLE ACC	LFMMACC	0.17	0.14	0.55	0.9%	0.4%	-1.3%	5.0%	2.0%
FRANCE	PARIS ALL ACC	LFFFALL	0.23	0.09	0.27	-1.4%	-1.0%	-1.5%	3.0%	0.0%
FRANCE	REIMS U/ACC	LFEEACC	0.19	0.14	0.26	-1.0%	2.0%	1.3%	3.0%	0.0%
FYROM	SKOPJE ACC	LWSSACC	0.12	0.00	0.00	-4.6%	-10.1%	-9.6%	15.0%	0.0%
GERMANY	BREMEN ACC	EDWWACC	0.04	0.05	0.06	-2.0%	-0.2%	-1.8%	-2% / 0%	0.0%
GERMANY	KARLSRUHE ACC	EDUUUAC	0.34	0.15	0.09	-0.9%	0.9%	1.2%	8.0%	3.0%
GERMANY	LANGEN ACC	EDGGALL	0.23	0.38	0.64	-2.5%	0.9%	-1.4%	-2% / 2%	3.0%
GERMANY	MUNCHEN ACC	EDMMACC	0.12	0.30	0.32	-2.0%	-2.5%	-3.9%	-2% / -5%	-5.0%
GREECE	ATHINAI ACC	LGGGACC	0.29	0.30	0.19	-1.1%	-2.2%	-2.6%	20.0%	27.0%
GREECE	MAKEDONIA ACC	LGMDACC	0.28	0.30	0.04	-1.1%	0.8%	-1.3%	18.0%	21.0%
HUNGARY	BUDAPEST ACC	LHCCACC	0.03	0.06	0.00	-1.5%	-3.5%	-4.0%	2.0%	0.0%
IRELAND	DUBLIN ACC	EIDWACC	0.19	0.04	0.00	-4.8%	2.8%	1.0%	0.0%	4.0%
IRELAND	SHANNON ACC	EISNACC	0.03	0.01	0.00	-1.8%	-0.8%	-1.0%	3.0%	6.0%
ITALY	BRINDISI ACC	LIBBACC	0.01	0.01	0.00	-0.6%	-7.3%	-7.1%	0.0%	0.0%
ITALY	MILANO ACC	LIMMACC	0.06	0.01	0.00	-1.5%	-2.1%	-3.3%	0.0%	0.0%
ITALY	PADOVA ACC	LIPPACC	0.14	0.02	0.00	0.5%	0.5%	-0.9%	2.0%	1.0%
ITALY	ROMA ACC	LIRRACC	0.09	0.01	0.00	-0.7%	-0.4%	-2.7%	1.0%	1.0%
LATVIA	RIGA ACC	EVRRACC	0.02	0.00	0.00	-0.5%	-1.7%	-0.6%	0.0%	10.0%
LITHUANIA	VILNIUS ACC	EYVCACC	0.04	0.00	0.00	1.9%	1.8%	2.3%	0.0%	0.0%
MALTA	MALTA ACC	LMMMACC	0.02	0.00	0.00	0.3%	31.9%	19.0%	0.0%	0.0%
MOLDOVA	CHISINAU ACC	LUUUACC	0.01	0.00	0.00	7.3%	7.9%	6.1%	0.0%	0.0%
MOROCCO	CASABLANCA ACC	GMMMACC	0.00	0.00	0.01	0.0%	-4.7%	-3.8%	na	na
NETHERLANDS	AMSTERDAM ACC	EHAAACC	0.12	0.04	0.18	0.9%	-1.5%	-1.3%	0.0%	0.0%
NORWAY	BODO ACC	ENBDACC	0.01	0.00	0.03	4.0%	2.5%	2.4%	0.0%	0.0%
NORWAY	OSLO ATCC	ENOSACC	0.00	0.00	0.47	4.6%	4.0%	1.9%	0.0%	-29.0%
NORWAY	STAVANGER ATCC	ENSVACC	0.08	0.00	0.01	4.9%	5.4%	6.6%	0.0%	2.0%
POLAND	WARSZAWA ACC	EPWWACC	0.32	0.66	0.53	4.5%	3.2%	3.6%	5.0%	5.0%
PORTUGAL	LISBOA ACC/UAC	LPPCACC	0.28	0.04	0.69	-4.2%	-3.2%	-2.5%	3.0%	-7.0%
ROMANIA	BUCURESTI ACC	LRBBACC	0.00	0.00	0.00	0.9%	-1.4%	-1.6%	0.0%	0.0%
SERBIA&MONT.	BEOGRADE ACC	LYBAACC	0.20	0.01	0.00	-2.4%	-3.6%	-4.2%	5.0%	0.0%
SLOVAKIA	BRATISLAVA ACC	LZBBACC	0.24	0.06	0.00	0.4%	0.4%	0.1%	5.0%	7.0%
SLOVENIA	LJUBLJANA ACC	LJLAACC	0.31	0.05	0.00	-1.4%	-0.3%	-0.5%	up to 5%	0.0%
SPAIN	BARCELONA ACC	LECBACC	0.23	0.40	0.63	-2.1%	-3.0%	-5.6%	0.0%	n/a
SPAIN	CANARIAS ACC/FIC	GCCCACC	0.69	0.89	0.38	-9.6%	-9.7%	-7.7%	2.0%	7.0%
SPAIN	MADRID ALL ACC	LECMALL	0.34	0.23	0.18	-7.3%	-7.3%	-8.1%	4.0%	4.0%
SPAIN	PALMA ACC	LECPACC	0.14	0.10	0.19	-0.6%	-2.3%	-4.7%	2.0%	0.0%
SPAIN	SEVILLA ACC	LECSACC	0.41	0.18	0.06	-8.3%	-9.5%	-10.6%	3.0%	7.0%
SWEDEN	MALMO ACC	ESMMACC	0.02	0.06	0.04	0.7%	-3.2%	-2.0%	1.0%	0.0%
SWEDEN	STOCKHOLM ACC	ESOSACC	0.00	0.05	0.02	-2.0%	-3.8%	-2.7%	1.0%	0.0%
SWITZERLAND	GENEVA ACC	LSAGACC	0.19	0.12	0.06	-0.7%	-1.3%	-2.7%	0% / 1%	3.0%
SWITZERLAND	ZURICH ACC	LSAZACC	0.17	0.13	0.19	-1.3%	-1.1%	-2.0%	2% / 5%	3.0%
TURKEY	ANKARA ACC	LTAAACC	0.19	0.17	0.21	3.0%	0.3%	1.0%	6.0%	7.0%
TURKEY	ISTANBUL ACC	LTBBACC	0.00	0.17	0.00	5.2%	1.8%	2.6%	6.0%	3.0%
UKRAINE	DNIPROPETROVSK ACC	UKDVACC	0.09	0.00	0.00	3.6%	7.0%	6.0%	0.0%	4.0%
UKRAINE	KIEV ACC	UKBVACC	0.02	0.00	0.00	4.3%	5.7%	4.2%	0.0%	0.0%
UKRAINE	L'VIV ACC	UKLVACC	0.00	0.00	0.00	0.6%	1.6%	0.7%	0.0%	0.0%
UKRAINE	ODESSA ACC	UKOVACC	0.00	0.00	0.00	6.1%	2.5%	2.5%	0.0%	0.0%
UKRAINE	SIMFEROPOL ACC	UKFVACC	0.01	0.00	0.00	1.4%	0.4%	-0.3%	0.0%	0.0%
UNITED KINGDOM	LONDON ACC	EGTTACC	0.22	0.05	0.07	-1.2%	-1.3%	-1.3%	3.0%	5.0%
UNITED KINGDOM	LONDON TMA TC	EGTTTC	0.11	0.01	0.02	-1.2%	-0.4%	-0.7%	1.0%	0.0%
UNITED KINGDOM	PRESW+MANCH. ACC	EGPXALL	0.17	0.05	0.02	-1.9%	-3.1%	-2.6%	1.0%	1.0%

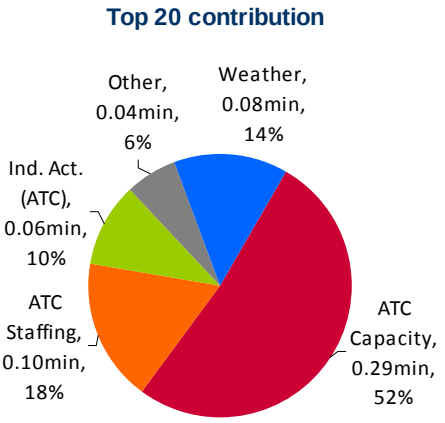
Table 2 – ACC Performance Results

** Required capacity increase in 2012 to achieve 0.7 min/flt (NOP 2012-2014, paragraph 4.4.1).*

ACCs contribution to the average network delay depends on the volume of traffic they handle. The top 20 contributors graph below shows that those ACCs that exceeded their forecast delay reference are mostly the highest contributors of the average network delay. The exceptions are Talinn, Amsterdam and Palma ACCs, which missed their forecast delay references but had relatively low contribution to the network delay average (not in the Top 20), and the Munich ACC which did not exceed its forecast delay reference significantly (by 0.02 minutes only) but had a significant contribution to the annual average en-route delay per flight average:



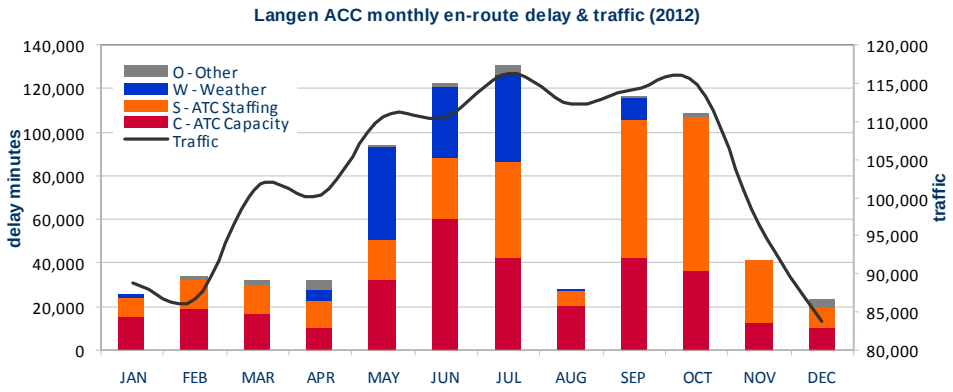
NOP 2012 also identified seven critical ACCs that could potentially exceed their delay references and therefore jeopardise the network performance in 2012, namely Nicosia, Langen, Munich, Athens, Warsaw, Canarias and Barcelona ACCs. Out of these, Athens and Canarias ACCs performed better than anticipated while Langen, Barcelona, Munich, Nicosia, and, Warsaw ACCs exceeded their targets and were among the top delay contributors in 2012. Additionally, although not identified as critical in NOP 2012, Marseille and Paris ACCs made significant contribution to the average network en-route delay per flight due to ATC capacity issues and Industrial Actions.



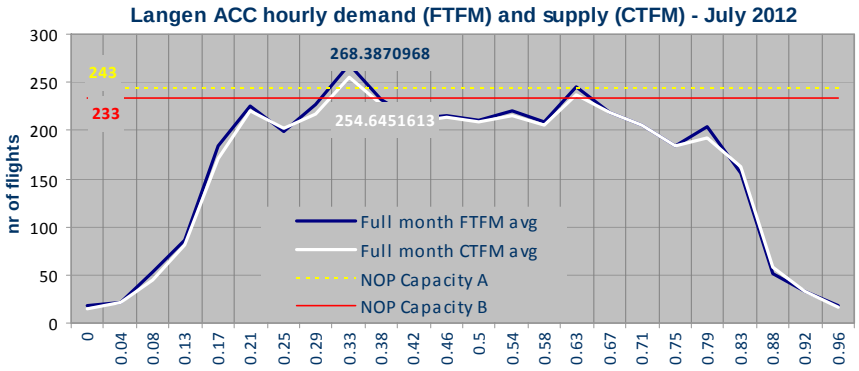
Overall, 90.5% (or 0.56 minute) of the 0.63 minute of annual en-route delay per flight average was generated by these 20 contributors. Although 52% of their delay (0.29 min/flt) was due to ATC capacity, the contribution of staffing and the industrial actions was a significant 28% (0.16min/flt):

The underlying issues at the top 5 contributor ACCs are explained in the section below:

LANGEN: Capacity and staffing delays at Langen ACC was consistently high from May until October, indicating a structural issue rather than a temporary problem:

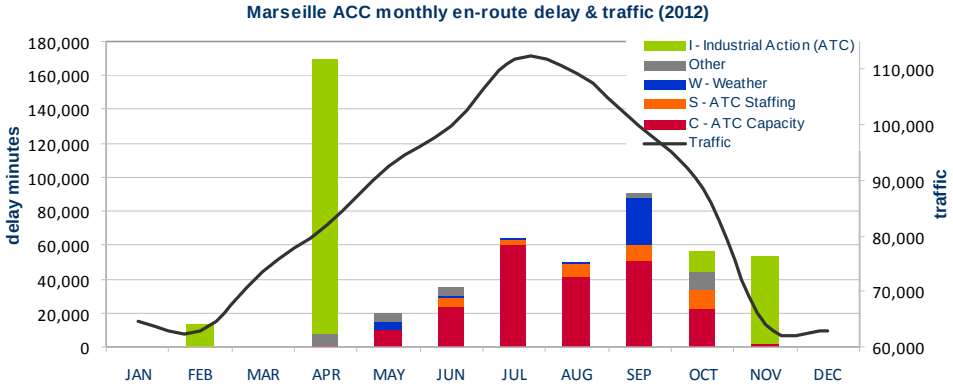


NOP 2012 planned a capacity increase of 2% at Langen ACC (Plan A, 243 flights per hour). The actual situation in July (the peak summer month) in the graph below shows that the average hourly traffic counts during the month stayed rather close to this baseline from 05:00 in the morning until 17:00 in the afternoon with occasionally exceeding the baseline level between 07:00 and 10:00 hours:



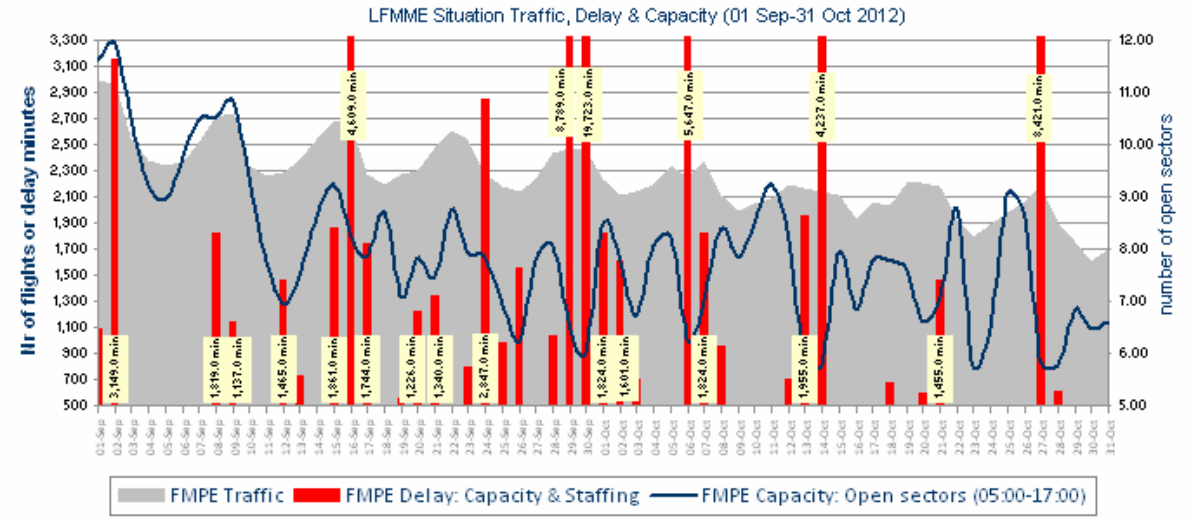
The traffic forecast for Langen ACC in 2012 was a fall of 2.9%. The actual traffic growth for the year was a fall of 1.4% but the traffic during the summer period increased by 0.9%. As such, the Langen ACC faced higher than expected traffic levels in 2012. The delivered capacity was an increase of +3% on 2011, 1% above the plan. These facts indicate that the delays at Langen ACC were a function of high traffic demand rather than an inability to deliver the planned capacity. However, the ACC appears to have no spare capacity due to staff shortages which creates a capacity gap in the presence of high traffic levels. This was particularly evident in September when the controllers reached their yearly overtime limits and therefore the staffing delays in September and October (the last two summer months) were exceptionally high.

MARSEILLE: Marseille ACC was not considered initially as one of the critical ACCs for 2012 but it had the 2nd highest contribution to the annual en-route delay average. Unlike Langen, capacity and staffing delays at Marseille ACC were not consistently high throughout the year but rather localised in April, September, October and November:



April and November peaks were caused by the industrial actions (0.24 minutes of the annual 0.55 minutes en-route delay average for Marseille ACC was due to strikes), but the analysis of the situation in September showed that the delays occurred exclusively in the East Sector Group and coincided with a systematic reduction of the capacities starting from end August onward particularly at the weekends. This can be seen

in the graph below which shows the daily traffic, the available capacity (number of open sectors in the configurations used during the peak 08:00-17:00 hour period) and the corresponding delays between 01 September and 31 October:



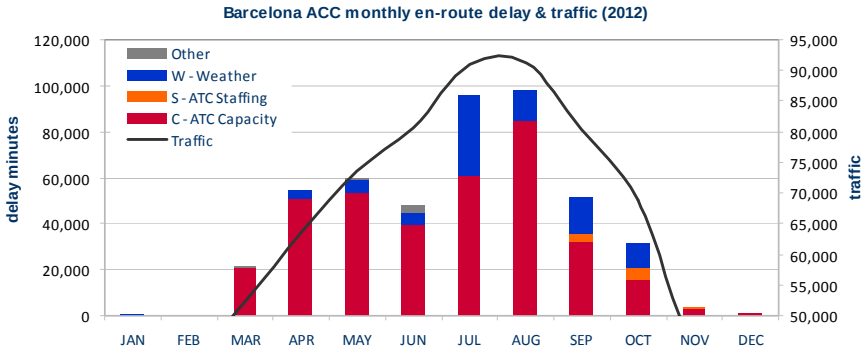
Although the seasonal traffic decline already starts at the beginning of September, as shown in the graph above, the highest delays occurred at the weekends when the traffic peaked and the capacities on the contrary were reduced. Further analysis of the situation at the weekend of 29-30 September (days with the highest delays) compared to the weekend of 01-02 September showed that the traffic fell by 20% while the capacity decreased by 25%. The reduced capacity at Marseille ACC became permanent for the winter with the Airac cycle 365 (20 Sep) where the maximum available sectors that can be used in a configuration in the East sector group was reduced from **15** (summer configuration) to **11** (winter configuration):

Available Configurations															
Number of sectors (in a configuration)	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Number of configurations in Airac 364	1	3	2	4	5	7	4	12	5	8	5	6	4	2	**3**
Number of configurations in Airac 365	1	2	2	3	4	3	5	7	6	4	**1**				

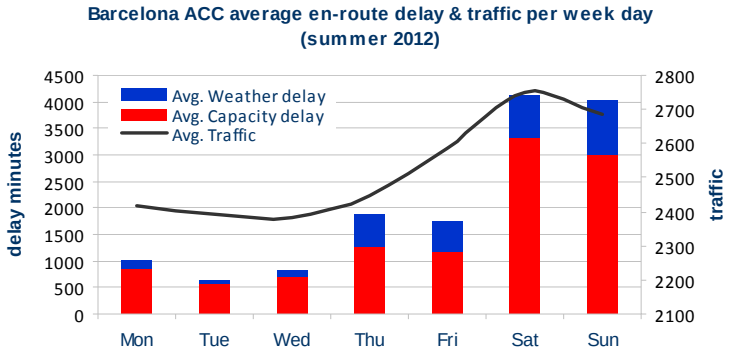
In summary, there was a clear mismatch of the East Sector Group capacities vs. traffic demand at the end of the summer season particularly for the weekends. Summer capacity configurations at Marseille ACC need to be maintained for a longer period if such delays are to be reduced.

BARCELONA:

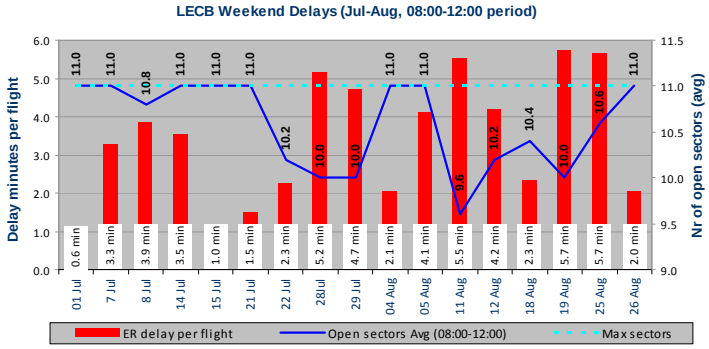
The two main delay reasons at Barcelona ACC were ATC Capacity (77.6%) and the weather (19.4%) while staffing delays were not an issue (2%). Capacity delays were high from Easter until the end of summer period:



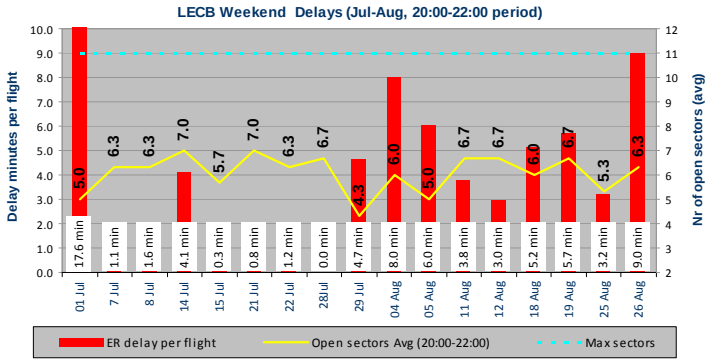
The traffic and delay profiles during June-October period showed that most of Barcelona delays occurred at the weekends with the increased traffic:



The analysis of July and August weekend data shows that most of the daily delay occurred between 08:00-12:00 period (47%), followed by 20:00-22:00 period (23%). The available ACC capacities for these periods in July and August and the corresponding en-route delay per flight averages are given in the graphs below:

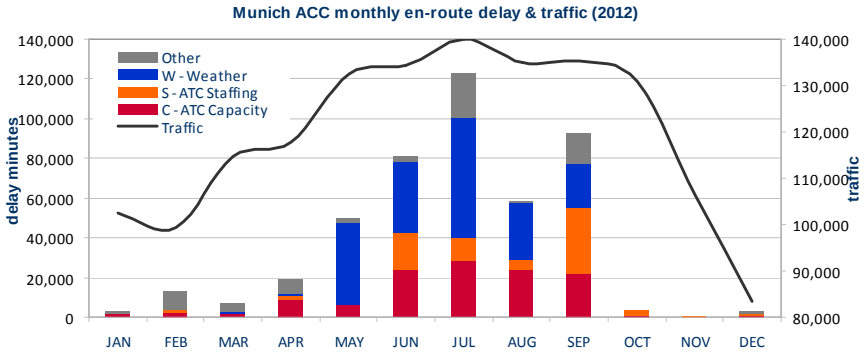


Barcelona ACC can have maximum ***11*** sectors. As seen in the graph above for the peak 08:00-12:00 period, half of the time the ACC run below the maximum configuration and the highest delays occurred when capacities were lowered below maximum (28-29 Jul, 11-12, 19 and 25 August). For the 2nd peak delay period (20:00-22:00), it was seen that the traffic load during this period is not particularly high (the afternoon traffic peak at Barcelona ACC is between 17:00 and 18:00) but the ACC capacities are lowered around 20:00 sharply. The average *number of open sectors* for this time period during July and August was ***6.1***:



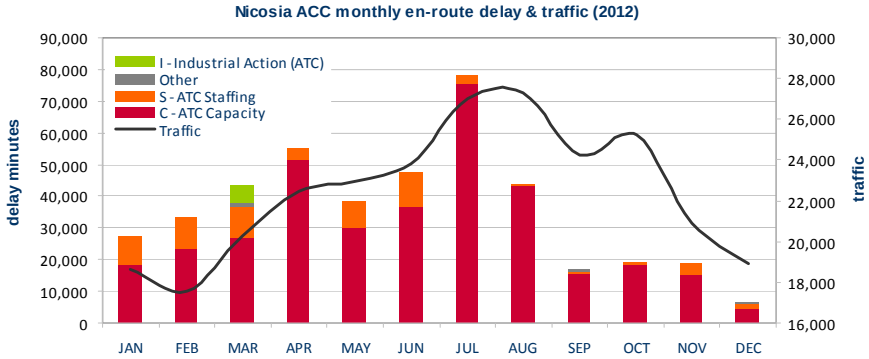
The interface with France was another factor for Barcelona ACC weekend delays during the summer period; a French RAD restriction that was active at the weekends in Bordeaux-Barcelona interface impacted the south-north traffic flow in Barcelona ACC by concentrating the traffic on a single point resulting in high loads in Barcelona upper sectors (which consequently also overloaded the lower sectors in Bordeaux due to AO re-routings to avoid the congestion in Barcelona). This issue is now remedied with NM initiatives and the problem is not expected to occur in summer 2013.

MUNICH:



Munich ACC's annual en-route delay average was 0.32 minutes per flight. 0.13 minutes of this delay was caused by en-route weather during summer. Additionally, the training of the controllers for the VOLMUK project particularly in September resulted in staffing delays. Although the ACC exceeded its annual delay forecast (0.30) by only 0.02 minutes, it contributed to the annual network delay average significantly due to the high volume of traffic it controls (Munich ACC had the 3rd highest traffic level among all ACCs in 2012 after London and Maastricht).

CYPRUS:



High capacity delays at Cyprus were due to the late introduction of the planned 4th sector on time; the new sector was introduced in mid August and immediately made a difference although the new sector has not been available 100% of the time. NM put substantial effort during the summer months to keep Nicosia ACC delays at minimum via close monitoring, providing configuration advice and by application of scenarios. Nevertheless, delays at Nicosia ACC exceeded significantly the plan (that was based on a traffic growth) despite a significant traffic decrease. Nicosia ACC still remains a major network concern.

2.4. Airports

2.4.1. Traffic and growth

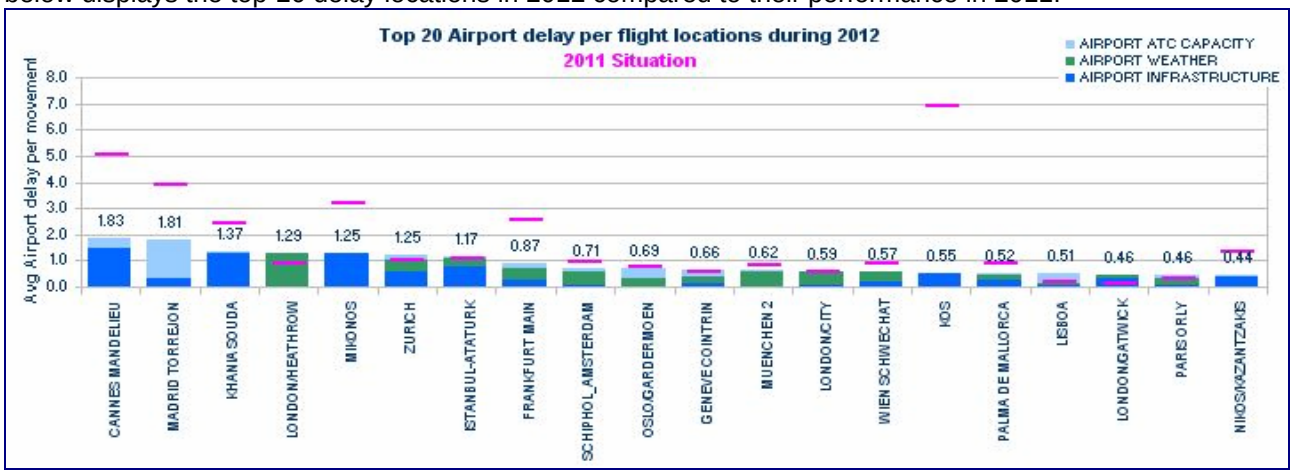
Most of airports had less traffic in 2012 compared to 2011. Among the major airports, Istanbul Ataturk and Oslo Gardermoen recorded growth while Amsterdam Schiphol and Paris Orly remained at 2011 levels:

N°	AD	Country	Airport	Traffic	Growth	N°	AD	Country	Airport	Traffic	Growth
1	LFPG	FRANCE	PARIS CHARLES DE GAULLE	680	-3.4%	26	LTAI	TURKEY	ANTALYA	213	-3.4%
2	EDDF	GERMANY	FRANKFURT MAIN	659	-1.2%	27	LGAV	GREECE	ELEFTHERIOS VENIZELOS INTI	204	-12.1%
3	EGLL	UK	LONDON/HEATHROW	650	-1.5%	28	EDDH	GERMANY	HAMBURG/FUHLSBUETTEL	198	-3.2%
4	EHAM	NETHERLANDS	AMSTERDAM/SCHIPHOL	592	**0.3%**	29	LPPT	PORTUGAL	LISBOA	197	**0.5%**
5	EDDM	GERMANY	MUENCHEN	540	-3.2%	30	LFMN	FRANCE	NICE COTE D'AZUR	195	**3.3%**
6	LEMD	SPAIN	MADRID BARAJAS	509	-13.3%	31	EGSS	UK	LONDON/STANSTED	194	-3.7%
7	LTBA	TURKEY	ISTANBUL-ATATURK	483	**12.4%**	32	EPWA	POLAND	WARSAW CHOPIN AIRPORT	188	-2.2%
8	LIRF	ITALY	ROMA/FIUMICINO	429	-4.7%	33	LKPR	CZECHIA	PRAHA RUZYNE	175	-13.1%
9	LEBL	SPAIN	BARCELONA	396	-4.6%	34	EDDK	GERMANY	KOELN-BONN	168	-4.0%
10	LOWW	AUSTRIA	WIEN SCHWECHAT	357	-1.3%	35	LTFJ	TURKEY	ISTANBUL/SABIHA	166	**5.2%**
11	LSZH	SWITZERLAND	ZURICH	357	-2.8%	36	EDDS	GERMANY	STUTTGART	164	-3.4%
12	EGKK	UK	LONDON/GATWICK	337	-2.0%	37	LFLL	FRANCE	LYON SAINT EXUPERY	163	-1.6%
13	EKCH	DENMARK	COPENHAGEN KASTRUP	332	-4.5%	38	LIML	ITALY	MILANO/LINATE	162	-1.7%
14	ENGM	NORWAY	OSLO/GARDERMOEN	322	**2.8%**	39	EGPH	UK	EDINBURGH	149	-2.8%
15	LFPO	FRANCE	PARIS ORLY	320	**0.7%**	40	LFML	FRANCE	MARSEILLE PROVENCE	146	**4.5%**
16	EBBR	BELGIUM	BRUSSELS NATIONAL	298	-4.7%	41	LEMG	SPAIN	MALAGA	137	-5.6%
17	EDDL	GERMANY	DUESSELDORF	296	-2.3%	42	UKBB	UKRAINE	KYIV/BORYSPIL INTERN.	137	-7.2%
18	ESSA	SWEDEN	STOCKHOLM-ARLANDA	287	-1.6%	43	GCLP	SPAIN	GRAN CANARIA	134	-9.8%
19	LSGG	SWITZERLAND	GENEVE COINTRIN	247	**2.3%**	44	EGGW	UK	LONDON/LUTON	134	-0.8%
20	LIMC	ITALY	MILANO/MALPENSA	239	-8.8%	45	ENBR	NORWAY	BERGEN/FLESLAND	132	**0.6%**
21	LEPA	SPAIN	PALMA DE MALLORCA	237	-3.9%	46	LFBO	FRANCE	TOULOUSE BLAGNAC	132	**4.2%**
22	EFHK	FINLAND	HELSINKI-VANTAA	235	-10.8%	47	EGBB	UK	BIRMINGHAM	125	-0.5%
23	EDDT	GERMANY	BERLIN/TEGEL	231	**0.8%**	48	LHBP	HUNGARY	BUDAPEST/FERIHEGY	119	-20.5%
24	EGCC	UK	MANCHESTER	230	**0.8%**	49	LROP	ROMANIA	BUCURESTI/ HENRI COANDA	118	**16.2%**
25	EIDW	IRELAND	DUBLIN	222	**1.0%**	50	LLBG	ISRAEL	TEL AVIV/BEN GURION	118	-2.3%
									TOTAL:	13454	51.9%

Table 3 -Top 50 airports for average daily arrival traffic in 2012

2.4.2. Hotspots

Compared to 2011 the delay situation has improved, although the overall traffic levels dropped as seen in the table above. Against this trend was Istanbul Atatürk airport facing a traffic increase of 12.4%. The graph below displays the top-20 delay locations in 2012 compared to their performance in 2011:



Further details on the performance and related operational issues for the airports which caused an impact to the network during 2012 as well as airports on which relevant operational improvements were achieved in the previous year are given below. Although concrete improvement actions were carried on in 2012, for some of these airports further actions are still required from 2013 onwards.

France: Cannes has greatly improved but remains appearing in the delay statistics due to the special events taking place every year. This is leading to over-demand reported as airport infrastructure related.

Spain: **Madrid Torrejon** remained in the statistic although it has significantly improved as well. The main reason was recorded as ATC capacity and it is expected that a change will be seen in 2013 as the General/Business aviation traffic will be transferred to Madrid Barajas as from February 2013.

Palma is facing ongoing constraints as it is close to capacity saturation during the summer season with very high traffic on different days of the week. A deeper analysis of the causes and contributing factors has been initiated by the NM and the close cooperation with AENA will be continued in 2013.

Greece: **Khania Souda, Mikonos, Kos, Nikos Kazantzakis:** Following the successful application of an operational trial, all the Greek summer destinations (Greek islands) have seen an enormous reduction in delays during 2012. A number of measures were put in place from strategic and pre-tactical planning to tactical operations involving the airports, local ATC, local flow management, airline operators and the airport slot coordination. Besides the application of local measures on the day of operations the adherence to airport slots was significantly improved by implementing a process to increase consistency between flight plan and airport slot. This resulted in a reduction of arrival delays of about 73% compared to 2011 with about 7.5% less traffic. It is agreed that the new processes will be maintained and further improved in summer 2013 where the traffic level is expected to increase by 7% to 8% (forecast is excluding general and business aviation) at Greek islands destinations.

United Kingdom: **London Heathrow** is above the 2011 delay of which almost all is attributable to weather. A trial had been conducted by NATS in order to assess the possibility of off-loading the holding stacks. Some potential was recognised and further analysis is required for which the NM is offering its support.

London Gatwick has registered higher delay in 2012 which is considered a one-off due to runway reconstruction works in the summer.

Switzerland: **Zurich** recorded slightly higher delays in 2012, which is related to weather and sub-sequent airport infrastructure (capacity) recorded as environmental constraints (noise protection) have led to the need operating the non-preferred runway configuration that has reduced capacity levels.

Turkey: **Istanbul Atatürk** is roughly at the same delay level of 2011 mostly divided between weather and airport infrastructure (capacity). This is due to impact of certain wind directions that lead to the necessity of using the non-preferred runway configuration that has reduced capacity levels. New procedures have been tested and put in operations as to mitigate, which demonstrated some improvements but was consumed by the increased traffic levels.

Germany: **Frankfurt** has improved compared to both 2010 and 2011 (2011 is not really comparable to 2012 due to the start of operation of the 4th runway and the move of the ATC tower operations, which caused one-off delays in 2011 but there is a clear improvement on 2010 as well). Weather impact remains the main issue at Frankfurt and some industrial action of airport staff as well as of Lufthansa cabin crew staff caused delays in 2012.

Düsseldorf is not within the top-20 list but was however facing continuous impact from surrounding airspace. Düsseldorf is planning to establish full A-CDM implementation in 2013 and the NM will offer support to further analyse the airspace related constraints.

Austria: **Vienna** has continued to improve its delay situation not the least through the application of a special procedure to avoid ATFM regulations for arriving traffic. This procedure is a combination of increasing arrival rates supported by the so-called cherry-picking of pre-agreed flights and close cooperation with neighbouring FMPs.

Portugal: **Lisbon** has encountered higher delays mainly recorded as ATC capacity, which was due to several strikes.

2.4.3. Airport CDM implementation

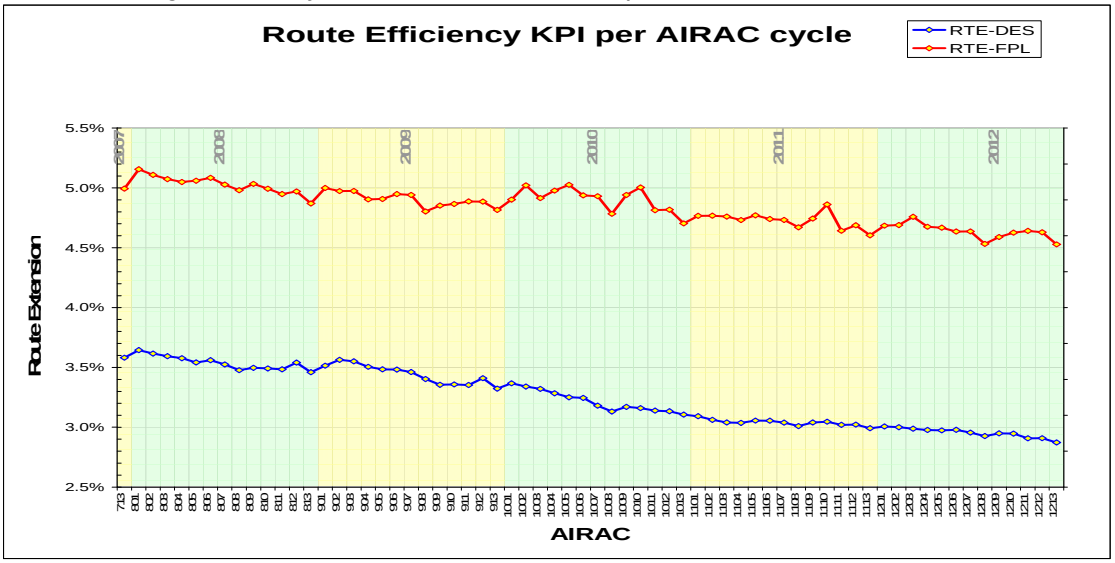
On 31 May 2012, **London Heathrow** became the 5th fully implemented A-CDM airport along with Munich, Brussels, Paris Charles De Gaulle and Frankfurt. Due to local issues, the exchange of DPIs with the network was suspended in July 2012.

Throughout 2012, a number of airports made significant progress towards full message exchange with the Network, and we anticipate that **Helsinki** will be connected to the network in January 2013. **Düsseldorf** will be achieving full implementation also soon in 2013. Because of the delay to the opening of Berlin Brandenburg International airport, it is planned to implement A-CDM at **Berlin Schönefeld** airport in March 2013. Plans are also in place to connect **Prague, Rome Fiumicino** and **Amsterdam** airports by the end of 2013, thereby taking the number of fully connected airports into double figures.

In 2012 EUROCONTROL, as coordinating body, submitted an application for TEN-T funding concerning the implementation of A-CDM. The proposal was accepted by the TEN-T agency and as a result 11 airports will be eligible to receive funding from the EC. A further proposal is expected to be submitted in early 2013 for additional 19 airports being offered the opportunity to participate. Participation implies a commitment to implement A-CDM. This hopefully will accelerate and enforce the achievement of the current implementation target, which are 20 additional airports to reach full implementation by end 2014.

2.5. Flight Efficiency

This chapter provides a summary of the progress made on the implementation of the actions agreed in the joint IATA/CANSO/EUROCONTROL Flight Efficiency Plan, drawn up in 2008, and responds to the requirements of the SES performance scheme. The Performance Scheme for air navigation services and network functions, adopted in the context of the Single European Sky II Regulations includes an operational requirement of the European ATM network for an improvement of 0.75 percentage points of the average horizontal en-route flight efficiency indicator in 2014, as compared to the situation in 2009.

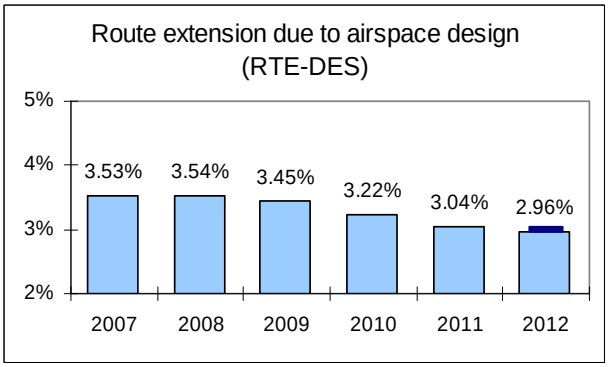


Flight efficiency indicators are monitored for airspace design and for flight planning. The evolution of those indicators since the end of 2007 is shown on the chart, showing a downward trend over the whole period and a 2012 average flight extension lower than in any previous year. While the airspace design target was met for 2012, the last filed flight plan target was missed by 0.04 percentage points.

The evolution recorded on the route extension based on the last filed flight plan during the year 2012 was negatively impacted by industrial actions and social issues that lead to reduced capacities and re-routings to avoid capacity constrained areas. Those events had a detrimental effect on the flight planning indicator and thus on the overall flight efficiency, which led to significant losses recorded during the AIRAC cycles of March, October, November and December 2012. Therefore it is absolutely required to constantly provide sufficient capacity allowing to further improve the flight planning indicator and to reduce the gap with the airspace design indicator.

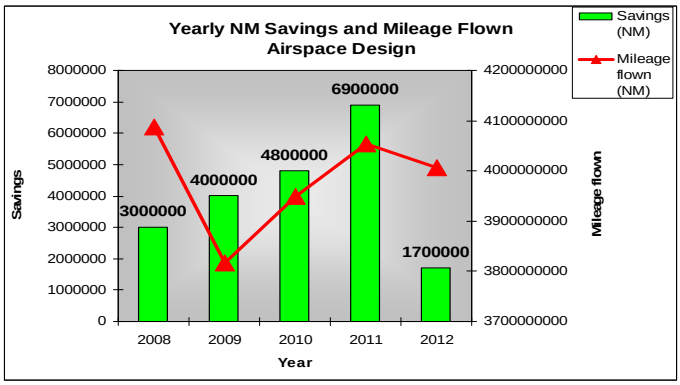
2.5.1. Airspace Design

As part of Flight Efficiency Plan, intensive work has been undertaken by States and ANSPs in close cooperation with NM to develop and implement enhanced airspace design solutions, with some 240 airspace improvement packages being developed and implemented in the 12 months preceding summer 2012. As a result, the route extension due to airspace design continued its downward trend throughout the year, reaching its lowest level ever in August 2012 at 2.93%



Yearly evolution of airspace design The average route extension due to airspace design decreased from 3.04% in 2011 to 2.96% in 2012, an average daily saving of nearly 4700 NM.

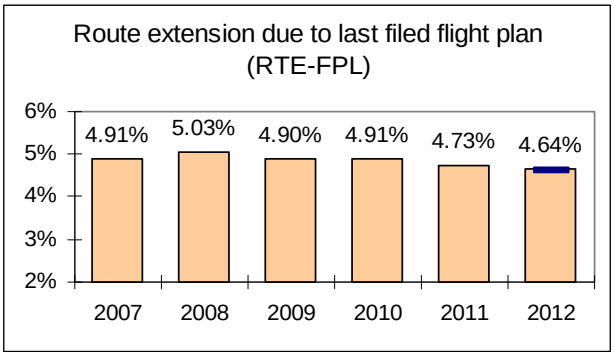
Over the year 2012, in terms of airspace design efficiency (if all flights would have used the route network without any route restrictions and with all CDRs permanently available), the distance per flight would have decreased by approximately 0.2 nautical miles compared to 2011. The graph below shows the yearly savings and the relationship with the mileage flown over the past 5 years.



Yearly savings due to airspace design Over the reporting year, this represents a potential saving of 1.7 million NM, approximately 10.5 kilotons of fuel, reduced emissions of 34.7 kilotons, or 8.6 million Euros.

2.5.2. Impact of Airspace Changes on Flight Planning

The flight planning indicator measures how much longer is the flight-planned trajectory than the great circle. It reflects inefficiencies in the use of the airspace (due to RAD restrictions, CDR availability, inefficient flight-planning etc.), but also user preferences for cheaper rather than shorter routes.

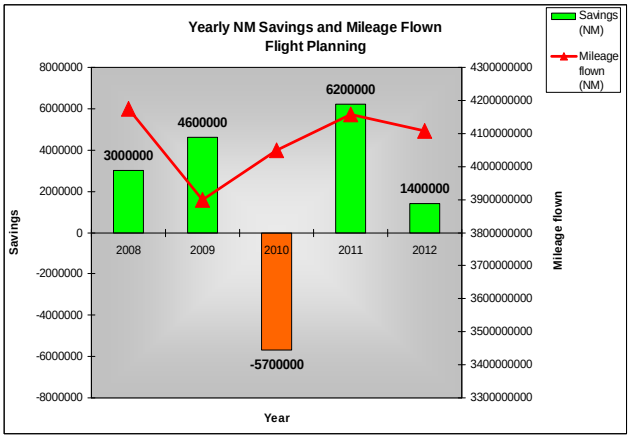


Yearly evolution of flight-planning indicator.

The average route extension based on the latest filed flight plan reduced from 4.73% in 2011 to 4.64% in 2012, reaching the lowest level ever at 4.53% in August 2012. After an increase due to several industrial actions between September and November the route extension based on the last filed flight plan went back down in December.

The average flight-planned distance decreased by approximately 0.15 nautical miles when compared to 2011, saving more than 1.4 million nautical miles. This means an average daily saving of nearly 3900 nautical miles. Over the year this represents savings of approximately 8500 tons of fuel, reduced emissions of 28 kilotons, or 7 million Euros.

The following graph shows the yearly savings and the relationship with the mileage flown over the past five years:



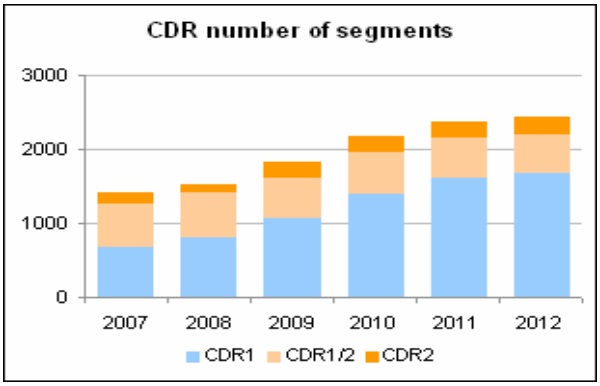
Yearly savings per mileage flown due to improved flight planning efficiency:

The positive trend reflects the efforts made during the year to facilitate efficient airline operator flight-planning through various awareness initiatives.

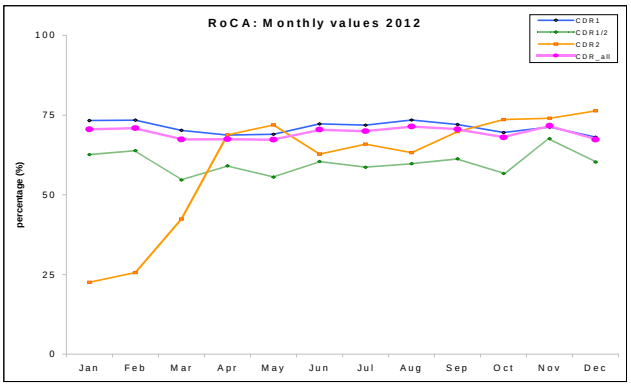
However more efforts must be made to improve the efficiency of the airspace utilisation and to constantly provide sufficient capacity thus ensuring that the indicator based on the latest filed flight plan follows a similar trend like the airspace design indicator.

2.5.3. Conditional Routes (CDR)

CDR availability is an important element when considering the ASM in the Network Operations context. The chart below shows little changes in absolute figures for the evolution of CDR development as elements of the network in 2012 compared to 2011. This is due to modifications in the status of routes segments from CDR to permanent routes (in countries like EF, EV, EP, LF, LB), and to a reduction of amount of CDR through the continuous network improvement process (covered by ERNIP).

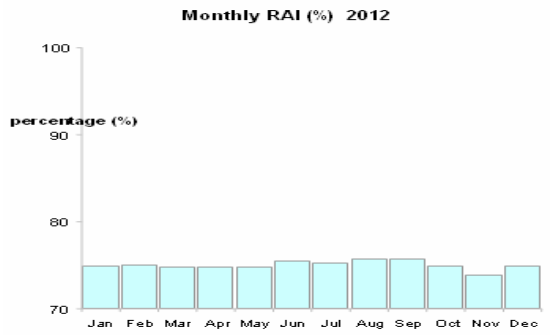


Evolution of CDR availability in 2012

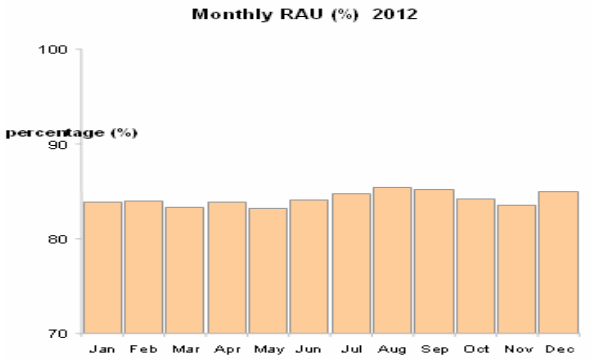


Rate of CDR availability (RoCA) in 2012.

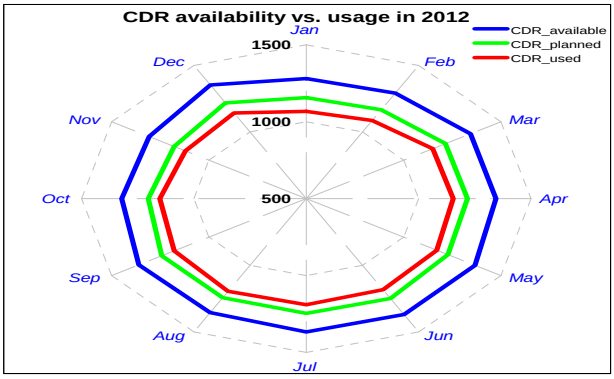
While RoCA for CDR1 and CDR1/2 is maintained at relatively constant values for the entire year, the CDR2 availability shows a steep increase from April. It is the result of two types of actions: one is the strategic move from CDR2 to CDR1 as a continuous process recommended also by the ASM Handbook; the second is the UUP rolling process beginning effectively in 2012. This element generates extra availability of CDR2 in the day of operation thus the high RoCA in the second half of the year.



The Rate of Aircraft Interested (RAI) that planned the available CDR is relatively constant at a value of approx 75% for the entire year 2012.



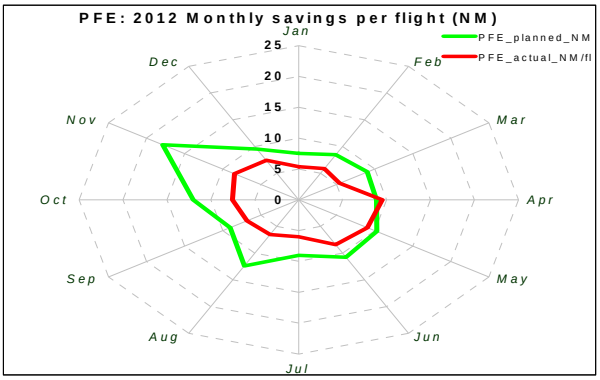
The Rate of Aircraft actually Using (RAU) CDR is higher with a slight increase in the summer months July to September. This is the result of ATC intervention for various reasons (expedite traffic, weather, etc)



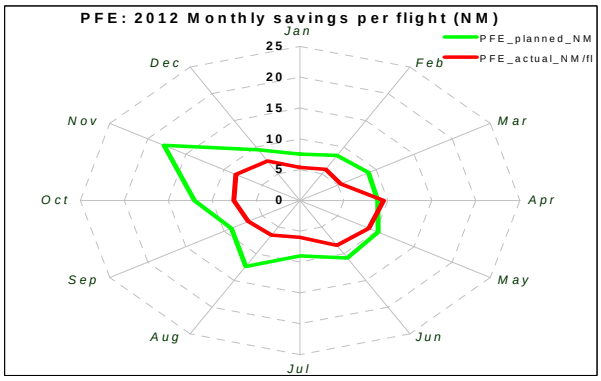
CDR availability vs. usage

The chart on the left shows the number of CDR available for flight planning (blue line), the number that were actually flight planned (green line) and the number that were actually flown (red line).

The numbers indicating the CDR used and planned versus the CDR available show in 2012 an almost constant difference. The explanation is that the route structure is stable enough and familiar enough to aircraft operators and offer sufficient predictability for the CDR opportunities. This is also a consequence of the higher availability (RoCA) of the CDR.



savings due to CDR in mileage

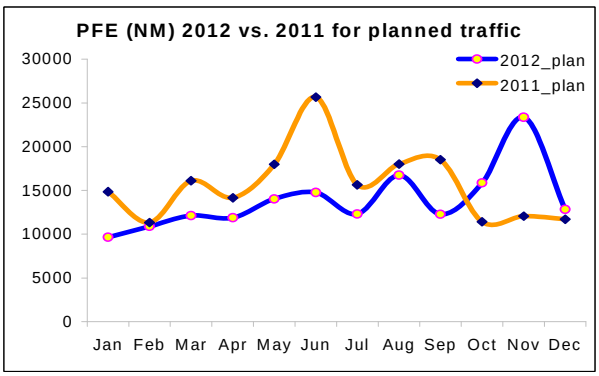


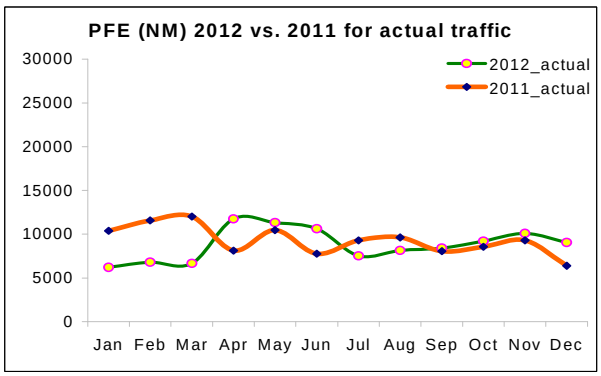
savings due to CDR in time

The savings per flight in distance and in time due to CDR are strongly dependent on the network opportunities offered by the CDR but in reality the actual traffic is not always able to follow the planned trajectory that would maximise the efficiency due to various causes outside the flight planning process.

Potential Flight Economy (PFE) can be realised when using the available CDRs for planning. This is influenced mainly by the CDR availability rate (RoCA) and the awareness/ability/willingness of the Aircraft Operators to consider the available CDRs in their FPL solutions. The indicator shows how far the real planned trajectories are from the optimum ones.

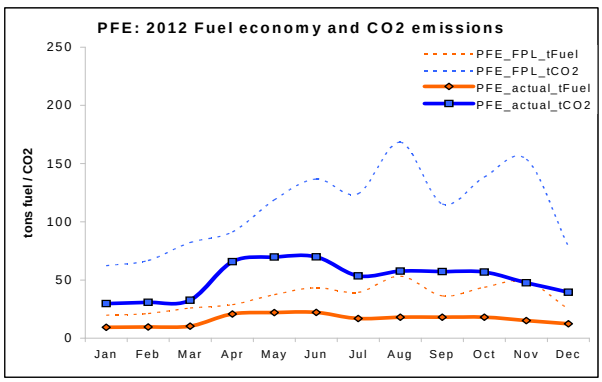
Concerning the actual traffic, the PFE is calculated with the actual flown CDRs from those available. The values may differ from the planned ones for a number of reasons (ATC intervention for direct/rerouting, delayed departure miss the CDR uptake and forcing to alter the initial FPL, weather, etc). When making the comparison and the values are smaller it also can signify that less potential economy is obtained when the initial trajectories are closer to optimal. The diagrams below depict the aggregated values calculated for all CDR types (CDR1, CDR1/2, CDR2) averaged by month:





Comparing the Potential Flight Economy (PFE) year on year 2012 with 2011 one can see that the periods with maximum expected gains are displaced toward the end of the year in 2012.

However the actual gain is relatively stable over the year and comparable with 2011. The increase noticed in April to June due too implementation to major changes to the network for summer 2012 is reduced when the traffic start to build up and the special events of the summer occur.



The environmental indicators of PFE translated in fuel savings and reduced CO2 emissions illustrated in the picture on the left have been calculated using the ICAO methodology for fuel burned and CO2 emissions. The curves indicate that there are differences between the expected economy from flight planning and the achieved results for the actual traffic. These differences have the same causes mentioned before mainly due to trajectory changes from the initial flight plan during the flight progress.

2.5.4. Free Route Operations

By the end of 2012, the Network Manager has coordinated, through the European Route Network Improvement Plan (ERNIP), the development and/or implementation of up to 70 airspace improvement packages relating to various FRA projects. At the same time 10 ACCs have now either fully or partially implemented Free Route Airspace with one example of cross border operations within a FAB. Experience was shared by those pioneers who have already implemented during the second FRA Workshop held in June 2012, where stakeholders were also able to present future plans and discuss outstanding issues. A number of NM system changes which have taken place during 2012 will enable larger scale FRA operations in the future.

2.5.5. 50 Most Penalised City Pairs (50MPCP)

Significant progress has continued to be made to improve the 50MPCP. Dozens of improvement measures have been implemented during 2012, resulting in a more flexible (and complex) route network, providing the Aircraft Operators with a considerable number of shorter route options. Whenever possible, the new routes are available H24, without restrictions, for all air traffic. In some cases conditions have had to be retained for certain periods of time, certain traffic flows or specific city pairs.

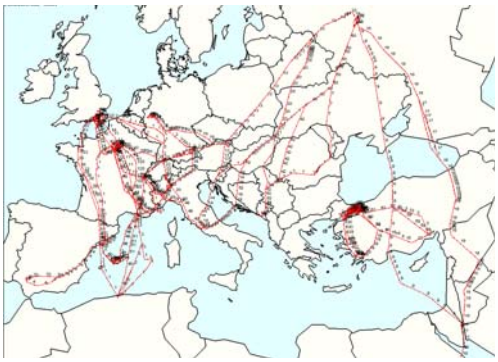
Through an interactive and positive exchange between the 50MPCP work and the other initiatives in the field of airspace design, the benefits are shared by all: most of the routes designed to improve the flight efficiency of the 50MPCP are open to all air traffic and at the same time, the 50MPCP take significant benefits from strategic initiatives studied and implemented to improve the efficiency of the whole route network (free route airspace, direct routes and DCTs inside large portions of airspace).

The 50MPCP list has continued to evolve in 2012, with 31 city pairs still waiting a final solution and 19 new city pairs replacing those which have seen effective and specific flight efficiency improvements. Among the 31 “old” city pairs still on the list, several of them have been improved in the recent past by appropriate measures, but the impact of these improvement measures was not sufficient to completely remove them from the list.

The 2012 list of 31 old city pairs highlights the following elements that need to be further addressed:

- the crucial position of FABEC airspace in relation to the 50MPCP;
- the traffic flow affecting the South-east Axis;
- the traffic flow between Italy and Spain;
- the traffic flow between Spain and FABEC;

The 2012 list of the 19 new city pairs give some clear indications about the related traffic flows and the portions of airspace which need to be specifically investigated:



- the key position of French airspace in relation to the 50MPCP;
- the significant involvement of the Turkish airspace, mainly due to domestic flights;
- the traffic flow between Moscow area and some Mediterranean countries

Whilst significant achievements were delivered in 2012 under this initiative, there is a need to further intensify efforts to consolidate the results already achieved, to maximize them and to look for additional possibilities to further improve the efficiency of the route network. A major effort needs to be deployed to ensure the utilisation of the proposed solutions.

2.5.6. Improvements to the Route Availability Document (RAD)

The Route Availability Document (RAD) is a tool that addresses how the European network airspace may be used. According to the Commission Regulation (EU) No 255/2010 the scope of the RAD is to be a common reference document containing the policies, procedures and description for route and traffic orientation.

The Network Manager Implementing Rule (Commission Regulation (EU) No 677/2011) makes a clear reference that the European Route Network Improvement Plan shall include route network and free route airspace utilisation rules and availability.

This highlights a clear need for the airspace design and airspace utilisation aspects to be brought closer and be addressed as one single activity. In this context, the Network Manager has drafted new terms of reference for the RAD Management Group and established a multi-disciplinary RAD oversight team.

These actions have facilitated a pragmatic refinement of the RAD during 2012, with full cooperation of Operational Stakeholders, aiming to overcome weaknesses in airspace design and ATM system functionality and to ensure application of the remaining restrictions only where and when required.

The RAD refinement in 2012 included the following aspects (not exhaustive):

- Harmonisation of terminology and definitions;
- Improvements in data structure and format, and change management;
- Improvements in RAD availability (publication) to users;
- Rationalisation of restrictions;
- Better integration with ERNIP

Further RAD improvement measures have been proposed for implementation in 2013.

2.5.7. Continuous Descent Operations (CDO) implementation

Environmental restrictions are now in place at most European airports. It is likely that the number of restrictions will continue to grow, resulting in a negative impact on the optimum network performance. One major mitigation measure is the implementation of the Continuous Descent Operation (CDO) technique which offers an early opportunity to minimise the environmental impact of aircraft operations.

The rapid deployment of CDO throughout Europe, even on a limited basis (limited by hours of operation and commencement height), will empower the network to respond to the environmental challenges.

By the end of 2012, **16 additional airports published Continuous Descent Operations** during some part of the day or night and mainly from intermediate levels at this stage. This makes a total of 87 airports which have introduced CDOs by now.

Airports continue to look at extending times and levels for CDOs within their airspace reorganisation plans. Several airports have CDO's from 'top of descent' if traffic permits. 5 airports have CDO trials on going. 57 airports are committed to introducing CDO and the CDO team will continue to support these airports with the **aim of achieving the introduction of CDOs at 200 airports by 2014**.

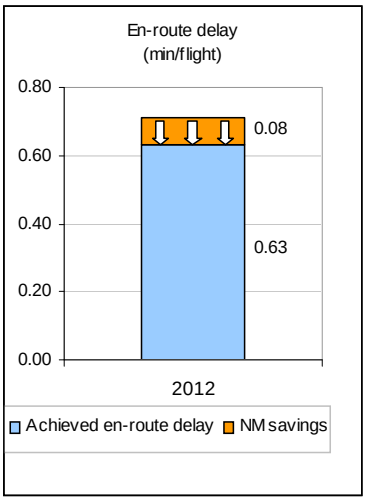
In 2013, the CDO team will be addressing the issues surrounding profile harmonisation, phraseology, publication, compliance with CDO facilitation and ATC/pilot CDO training, in collaboration with interested stakeholders e.g. Jeppesen, ANSPs, IATA, IACA, ERAA, ECA, IFATCA, CANSO, Aircraft Manufacturers and major airlines. The 3rd European CDO workshop will take place on 18/19 March and it is seen as an integral part of the strategy to address these issues.

2.6. NM contribution

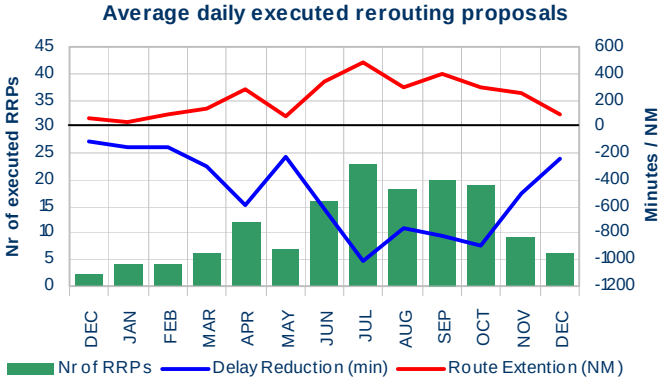
NMPP[7] defines a range of indicators which presents performance so that stakeholders understand the NM added value with respect to ATM network performance. In the capacity area, the main target for NM is to reduce en-route delays by 10% below the declared plans for 2012-2014, also called NM contribution to delay savings.

There are a number of actions performed by Network manager Operations Centre (NMOC) to reduce delays such as the Re-routing Proposals (RRPs) and NMOC initiated CDM actions (e.g. rate negotiation with FMP, reconfiguration of the regulations, proposal for different sector configurations to increase capacity, level capping). For the time being, the delay savings achieved by NMOC by means of avoiding potential regulations, application of scenarios or other tactical interventions on individual flights (e.g. slot swap, force CTOT, exclusions/inclusions) are not measurable.

Among the measurable actions in 2012, the estimated total delay savings achieved by NMOC is approximately 730,000 minutes, which is an average of 1900 minutes per day, a saving of 10.7% of the total network delay. The overall effect of this reduction is 0.08 minutes of en-route delay per flight. In other words, without the NMOC reductions, the annual en-route delay average per flight would have been 0.71 minutes:



Among different delay reduction actions, the re-route proposals saved **530** minutes of en-route delay per day at a cost of 210 NM extra mileage flown. The daily average number of proposed alternative routes was 21 (flights) of which 11 were accepted:



7 Network Manager Performance Plan (NMPP) 2012-2019.

SECTION 3: AIRSPACE USER'S VIEW (SUMMER PERFORMANCE)

(As presented by IATA and IACA during the 77th RNDSG meeting on 2-4 October 2012)

3.1. IATA: ATM performance

Airline Bottom Line:

Following up on last year's report, the worldwide financial situation continues to be difficult. Based on the market's view that the Eurozone sovereign debt crisis may intensify with a further weakening economic growth in the second half of this year as a result, the European airline industry is forecast to face a financial loss by year end. With the bankruptcies of Spanair and Malév still fresh on everybody's minds, European airlines need to permanently improve on operational efficiency in their struggle for survival.

Network Performance:

Overall 2012 network performance to date has improved again compared to the same time period in 2011. En-route ATFM delays are 40% reduced, and airport ATFM delays are 25% reduced. Traffic decreased by 1.6%. The network en-route performance is on track to better the network target of 0.7 minutes per flight, however, the final outcome will be subject primarily to any further industrial actions. Five ACCs account for almost half of the en-route delays : Langen, Munich, Nicosia, Marseille, and Barcelona. In addition, Oslo and Lisbon are significantly off forecast. Good performers include Athens/Makedonia, Warsaw, and the Canarias. In terms of airports, the highest delays have been generated by London Heathrow (mainly due to weather) and Istanbul Ataturk. Frankfurt Main as well as the Greek airports have seen their delays reduced. The Network Manager has contributed significantly to the improved performance to date through its strategic (Network Operations Plan) and pre-tactical coordination activities with the majority of ANSPs. All ANSPs are requested to work closely with the Network Manager to mitigate existing ATFM issues. Many of the ATFM delays are staffing related, which can be avoided. Especially when it comes to the long standing staffing issues in some locations, ANSPs are urged to come forward with solutions. In April, through good collaboration between the Network Manager, ANSPs, and AOs, the ATC slot swapping procedure was expanded into swapping within pre-defined groups of operators providing AOs increased operational flexibility, strengthening the ATFM equity principle, and allowing the Network Manager to further optimize its ATFM network performance.

Southwest Axis:

In April, social unrest in France caused Marseille and Bordeaux ACCs to be off delay forecast with less traffic. With 7% less traffic compared to the same time period in 2011, Barcelona ACC delays are three times higher during the weekends than during weekdays. With 2% less traffic, Lisbon ACC delays are well off forecast due to social issues connected to the economic crisis. Lisbon has reduced operational pre-tactical cooperation with the Network Manager making it impossible to improve the situation. The Network Manager is requested to continue working on full strike contingency procedures for all EUROCONTROL countries. Following the example of previous years, the Bordeaux-Barcelona interface has continued generating delays. The development of a mitigation plan started by the Network Manager will require a close cooperation from the ACCs involved. Improvements in Palma have been recorded thanks to the use of variable taxi times during peak hours, and thanks to an amended traffic volume.

Northeast Axis:

During Euro 2012, Poland and Ukraine showed a good performance according to plan, while having their highest ever traffic levels. Local and network preparation and cooperation were excellent for both. As Warsaw prepares for the implementation of a new ATM system, it is very much desired that they continue to display the great effort that was made during Euro 2012. Oslo en-route ATFM delays have increased significantly due to social issues connected to local organizational changes. ATFM mandatory scenarios were available for mitigation in case of extreme situations only.

Southeast Axis:

Thanks to a good collaboration between the Network Manager, the Hellenic Civil Aviation Authority, the Hellenic Air Navigation Service Provider, and the Hellenic Slot Coordination Authority, a procedure to minimize delays at Greek airports by improving adherence to allocated airport slots was successfully tested and put into operation. For the period May through August, delays were reduced by 74% with a decrease in traffic of 7.5%. Compared to the same time period in 2010, delays were reduced by 62% at comparable traffic levels. In addition, Greek en-route ATFM delays saw an important drop. Langen ACC continues to struggle with a staff shortage. Implementation of the Dusseldorf ARR West overflow sector was expected to alleviate a long standing problem, but this is postponed to 2013. DFS is requested to resolve long standing staffing issues. Munich ACC is requested to work closely with the Network Manager on the transfer of its

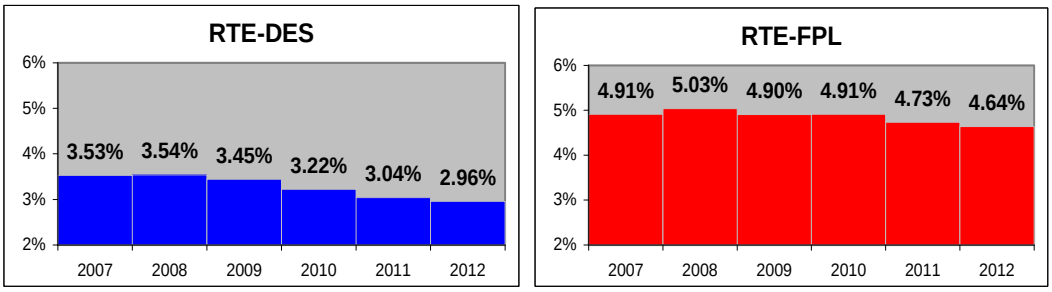
upper airspace to Karlsruhe UAC (VOLMUK) with capacity reductions for training and transfer expected both at Munich and Karlsruhe well into 2013. Relating to the new ACC in Tirana, instances of late notification of operational changes were experienced. ANSPs are requested to advise potential changes to the Network Manager as early as possible to allow for correct coordination with all stakeholders. Despite the availability of an additional 4th sector at times, Nicosia ACC has been generating 20% more en-route ATFM delays so far due to ongoing local social issues. An increase in the basic sector capacities is required. Istanbul Ataturk airport traffic growth in combination with unfavourable winds applied to the existing runway configuration have been causing significant delays. The Turkish Authorities are requested to work closely with the Network Manager for a solution.

Events:

Apart from the excellent local and network preparation and coordination for Euro 2012, the same can be said for the London Olympics. A temporary Olympic Axis was established including daily teleconferences, rotating UK NATS secondees, and shadowing by a Brazilian CGNA delegation in preparation of the 2014 world cup soccer and the 2016 Olympics in Rio de Janeiro. Excellent work by UK NATS and the Network Manager. In addition, a great effort has been made by the Network Manager to lead ICAO's European region towards implementation of the ICAO FPL 2012 on upcoming November 15. In a simultaneous global awareness effort conducted by IATA for its members, reactions of high appreciation are received from other world regions for the quality of guidance and training material provided by the Network Manager. In April, VOLCEX 12/01 including the activation of the AOCCC took place. Compared to VOLCEX 11/01 last year, the Network Manager's leadership was missed both in the preparation and during the exercise. European authorities are requested to provide full transparency in terms of the SRA methodology for both European and non-European operators (mutual recognition). Repositories of AO SRAs and State intentions are needed for efficient planning purposes. EVITA was again found useful by AOs, but it requires priority for appropriate technical and operational support.

Conclusions:

When using the European Commission's currently effective performance Implementing Rule as a reference, there is little doubt that a good job has been done by the Network Manager and ANSPs when it comes to reducing delay minutes, and when it comes to reducing the network route extension.



Regarding the reduction of the route extension (environment indicator), it is recommended that for measuring the AO's reaction to the drop in airspace design indicator, the actual flown route with the actual wind component applied is used instead of the route from the last filed flight plan. This way, instead of the planned nautical ground miles, the actual nautical air miles are reflected which is what really counts for AOs when talking route efficiency in relation to the existing environment indicator. A choice of routes instead of just the one great-circle route remains an explicit requirement for achieving route efficiency.

Despite the good work, there is however a serious concern on the AO side that current network flight efficiency does not take AO flight efficiency fully into account. Since AO flight efficiency is cost based and unique to each and every individual flight, only AOs know what is best to operate their flights efficiently for which AOs require operational flexibility.

As such, AOs expect ATFM to bring not only the most efficient utilization of available airspace and airport capacity, but also the facilitation of the most economical conduct of their flight operations.

3.2. IATA: Airports/TMA Performance

Airports with high delays

Departure delays at the airports Barcelona, Fiumicino, Nice, Palma de Mallorca, Malaga, and Faro had a severe impact on airline on time departures.

During the first half of 2012 airlines continued to suffer from severe ATFM delays, unpredictable start-up delays and long taxi out times at **Istanbul Ataturk airport** when the non-preferential (converging) runway configuration was in use due to southerly winds. However, by the end of May, several new operational procedures became effective. The most important ones were the use of standard routes for taxi-in and taxi-out and the implementation of new SIDs and STARs which enabled RWY 35L/R departures while conducting RWY 23 arrivals. In fact operational tailwind limits were increased through which the preferential runway system could be made available for longer periods of time, and which had resulted in considerable fewer delays for the majority of aircraft operations. At the downside of these improvements, long haul carriers were penalized by commercial pay load hits due to tailwind departures.

Airline operations into **Zurich airport** were almost every day faced with ATFM regulations causing delays due to shortage of ATC capacity where traffic demand exceeded the airport declared capacity.

Departure delays out of Zurich airport for long-haul airlines are prevalent due to the inability to depart Runway 28. These flights must depart the longer Runway 16. This causes delays (sometimes in excess of 15 minutes) due to the need to de-conflict with Runway 28 departures and with other TMA conflicts (eastbound Runway 28 departures fly through the Runway 16 SID path)

Special airport events with relevant impact to airlines operations

Delays due to industrial actions by ATC were reported in Portugal and some Spanish airports. Also continued labour issues, primarily in France and Italy were reported.

The ANSP at Istanbul Ataturk airport organized meetings with Airlines with the aim to improve the delay situation. Also, the ANSP ordered for a capacity enhancement study, which had been awarded to NATS. At the same time the Turkish DGCA and the ANSP at Istanbul Ataturk airport started a disruptive management study related to adverse weather conditions.

Key Concerns

- Airlines continue to emphasize the need for standardization of Airport CDM applications at the European airports. Airport CDM is implemented at Brussels, Frankfurt, Munich, Paris CDG, London Heathrow, Helsinki and will be introduced at an additional number of airports, like Dusseldorf, Osnabrueck, Berlin Schoenefeld, Amsterdam Schiphol and Prague in 2013. Local interpretations and deviations from the EUROCONTROL Airport CDM concept will back fire on the confidence building of airlines in Airport CDM. In adverse weather conditions the predicted take-off times are still not satisfactory.
- In this sense it is good to report that at the request of IATA, airports and ANSPs, EUROCONTROL started the Airport CDM Harmonization Task Force with the aim to create harmonised procedures and processes at airports.
- EUROCONTROL is also looking to create a checklist of local implementation at airports. This checklist would be used to indicate when A-CDM at the airport has reached sufficient maturity locally to enable the final step of connecting with the Network Manager in the provision of Departure Planning Information (DPI) messages
- At individual CDM airports, CDM applications continue to create adverse reactions by participating airlines. A recent report at Paris CDG may provide an insight in the difficulties an airline is facing whilst not being able to rectify the situation. "*During de-ice operations the crew of our cargo long haul flight called for an on-time pushback, but was denied to be de-iced. The crew was informed that all passenger aircraft were to be de-iced first. Two hours later, the aircraft was cleared to taxi for de-icing. The delay almost caused the crew to time out and we were within 15 minutes of cancelling the flight for crew duty. It is not clear where the decision making was taken in the CDM process*". CDM does not discriminate between passenger and cargo aircraft as flights are supposed to be equally handled also due to the fact that fees are the same.
- The key concern for airlines is still to cope with industrial actions that have a severe impact on airline schedule planning and operations.

What Went Right in 2012

- The operations into Greece were very smooth compared with last year, which was due to the special attention which was paid to the airport slot process and partly due to Greek financial crises which revealed a slight downturn in traffic demand.
- The London Olympics that were held during 3 weeks in July and August were a rousing success and job very well done by all stakeholders involved. The success was mainly attributable to a thorough planning and consultation process and the fact that all sectors were fully staffed during the Olympic period.
- Working collaboratively. In the case of IST the ANSP managed to engage all stakeholders to be a part of the solutions. The average taxi-out times had been improved in the second half of 2012 compared the first half of 2012, which resulted in the highest on time performance (OTP) in 10 years. The average OTP was 72 % in the first half of 2012 which increased to an average of 80 % by the end of 2012.

What needs to be improved

- Airport taxi times and runway in use: Computer flight plans make use of weather information and actual take-off times so that Estimated Elapsed Times can be accurately calculated. Airline and airport schedules are based on OFF/ON Block times. The difference is in the taxi time that is linked with the runway in use.

  For accurate flight planning it is essential to know which runway is being used and what the associated taxi time will be to calculate an accurate CTOT. Experiences show that taxi times are rarely correct and often not provided at all – even though EUROCONTROL B2B system can handle it. It is requested to put more effort into getting this information to the Network Manager in a timely manner.
- Better coordination at Pisa airport in slightly bad weather.
- Although the operations at Istanbul Ataturk airport had been stabilized during preferential runway operations, the operational situation is still far from ideal during non-preferential runway operations that result in a significant capacity loss and pay-load losses for long haul traffic. Continued focus and collaboration with the Turkish Authorities is needed for further improvements to accommodate and serve all airline customers in a safe, efficient and economic way (e.g. working on special procedures during VMC).
- Airlines request the creation of a single link with all CDM airports through the protected NOP/CHMI in order to be able to monitor the status of their flights. With the existing user account it will facilitate OCCs (Operational Control Center) to see their flight status at all CDM airports instead of using different user accounts and passwords.
- Confidence building with Airport CDM is crucial with all stakeholders, therefore introduction at each stakeholder level must be well prepared and its applications must be guided by a strong team of local airport representatives and CDM experts who should be available to assist the airlines during the initiation of the CDM process. A classroom type of CDM education activity with airline, airport and ANSP representatives available would be a preferred proposed option.
- IATA is willing to assist airlines in providing an overview of CDM applications in an effort to establish a harmonized communication plan for airlines at local, OCC and flight crew levels. The EUROCONTROL CDM e-learning tool may assist to this end (see https://trainingzone.eurocontrol.int/apt-catalogue.htm).

3.3. IACA

Pre-season forecasts

The 2012 summer season got under way with a sense of optimism, with the threat of political and financial turbulence receding. The green shoots in the economy appeared to be starting to appear in a number of countries in northern Europe and it was hoped that this would kick-start outbound travel. Economic issues continued to dominate a number of key destination countries surrounding the Mediterranean with concerns over the position of Greece within the Eurozone and fears over the economies in Spain and Portugal. There had been suggestions that there would be increased demand to the Iberian Peninsula and the Canary Islands with a reduction in flights to the Eastern Mediterranean – notably to Greek destinations. Continuing protests in North Africa were expected to curtail discretional travel to Egypt, Tunisia and Morocco.

STATFOR data had forecast a reduction of -1.3% with fairly wide variances in demand –ranging from reductions in Portugal (-0.5%), Spain (-5.6%) and Italy (-1.3%) set against increases of 4.8% in Cyprus and 0.7% in Greece. The failure of a number of air carriers during the early part of 2012 – notably MALEV and Spanair – was another one of the reasons cited for lower traffic demand. At the same time, where traffic was not forecast to grow in many States it was forecast that traffic demand at peak times would increase pressure on key sectors. There remained concerns over social unrest across Europe and in fact the summer season began with industrial disputes affecting ATC in a number of key States.

IACA noted that the continuing increase in fuel prices would drive demands for increasing flight efficiency including routings closer aligned to great circle. The prospect of further Network Management activities along with another significant raft of RNDSG List 'A' proposals were expected to drive network delay down. The summer was also expected to be dominated by major sporting events with the Euro2012 Football Championship in Poland and the Ukraine and the Olympics/Paralympics in London.

The reality – the Summer 2012 Season

Forecasts for daily traffic demand were to prove fairly optimistic with reductions in flights (compared to the same period in 2011) of between 3.2% and 1.3% in the first part of the summer. The reduction in traffic was also seen as the primary reason for the reductions in ATFM-related delay – although it was interesting to note that whilst en-route ATFM delays had reduced there were some overall increases in airport ATFM delay. Most of the traffic modelling proved accurate with traffic demand increasing for Turkey and reducing for Greece and Egypt. Demand for Spain, Portugal and the Canary Islands held up well. Furthermore, two trends could be observed: some charter carriers decided to move away from long-haul charter operations with many aircraft being switched to European operations whereas other charter carriers started to expand their services in the long range sector. This shows that a continued market consolidation is taking place.

The South-East Axis

IACA began the summer expressing concerns at the prospects for ATM delay affecting Greece as well as Cyprus and, taking the summer season as a whole, these fears proved well-founded. Cyprus remains the biggest cause for concern on the axis and IACA is willing to work with the Network Manager and the DCA to ensure improvements for 2013. Traffic to Greece was up on 2011 compared to 2010, IACA carriers were facing significantly high delays in the Greek sector in terms of en-route and arrival delay. This fact and due to Greece being one of IACA's most important and main holiday destinations, IACA decided to actively participate in the joined HCAA/Eurocontrol project to both support and facilitate an improvement of air traffic management for flights to and from Greece. The results of this procedure show an impressive decrease of delay and demonstrate that work by NM, IACA and the HCAA on managing delay at some of the most restrictive island airports has been truly successful. IACA carriers expressed their gratitude and satisfaction of the positive developments and achievements noted at Hellenic airports in a letter to the Governor of the HCAA.

Other States on the axis had a much improved operation with delays associated with Croatia down significantly on previous years. Industrial action was reported for Italy for one day this summer.

The North East Axis

Once again, IACA members reported no issues with States on the North East Axis, despite industrial action in Norway this summer. IACA would like to thank Maastricht UAC and Karlsruhe for their continuing work in the field of Free Route Airspace. The airspace changes implemented ahead of the European Football Championship were undoubtedly one of the reasons for the event generating so little delay. The biggest issue on the axis this summer has been weather with thunderstorms, heavy rain and low visibility affecting operations at a number of major airfields in north-west Europe.

The South West Axis

The axis had a very quiet summer although a number of industrial actions in Portugal roused the axis. The Portuguese ATC went on strike for a period of thirteen days in total during April, May, June and July. For IACA members, GMC at Palma airport has remained a problem throughout the summer although some improvement had been experienced over recent weeks in August and September with changes to taxi times. Flight crew gave positive feedback on the adjusted taxi time periods at PMI. The latest statistics show positive effects of the early morning coordination between Eurocontrol and PMI TWR as well as the extended taxi time. The application of a different regulation (LECPMXX) to exempt LEMH departures in the Menorca sector contributed positively as well. The Bordeaux/Barcelona interface has also become an increasing issue, affecting PMI inbound and outbound traffic flows and it is to be hoped that this will be addressed and resolved at the forthcoming axis meeting respectively for the summer season 2013.

Special Events

Apart from the Euro2012 Championships the other major sporting event was London 2012 with the Olympics starting on the 27th July and the Paralympics on 29th August. Those involved in Olympics planning in the UK and the surrounding States are to be congratulated for a trouble-free operation. It will be interesting to review the increases in aircraft movements and delay statistics (especially at peak times) once the data has been made available.

Key Concerns

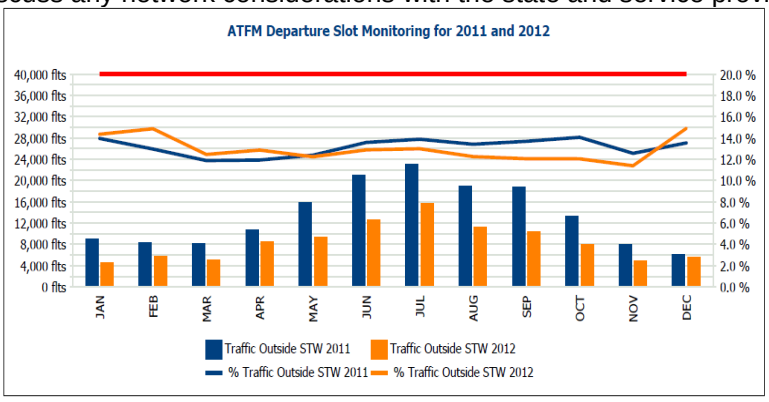
The key concerns for 2013 remain economic with the issues surrounding the Eurozone remaining unresolved and signs that there will be more disposable income available as financial restrictions in some parts of Europe start to ease – hopefully leading to increased travel. Due to the economic crisis, especially in Greece and Spain, the Greek success story in terms of the achievements of the Hellenic airport trial, has to be continued. The same applies for PMI (*Palma airport*), an important destination for IACA carriers. Therefore IACA would like to see the continued good collaboration between Eurocontrol, AENA and more specifically PMI FMP. IACA will support further optimization of procedures and processes on the ground of PMI.

Additionally, IACA would like to see addressed for 2013, is the re-opening of the airspace over Kosovo. With the cost of oil continuing to increase the need for the most cost or flight efficient operations remain paramount and the shortening of routes on the south-east axis offered by this change remains one of the most sought after airspace changes. At the same time the success of Free Route airspace along with Night Direct and increased use of Flexible Use of Airspace are ensuring continued flight efficiency and will be fully supported by IACA member airlines.

SECTION 4: ATFM IR COMPLIANCE

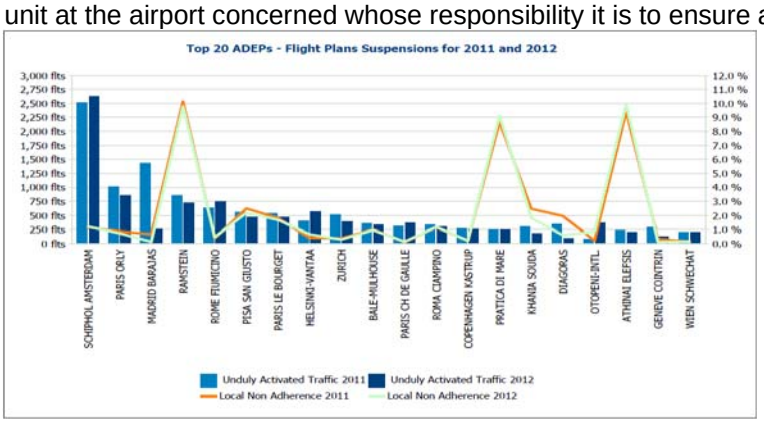
4.1. ATFM departure slots

The overall percentage of traffic departing within their Slot Tolerance Window (STW) was 87.2% in 2012, meeting the target of 80%. However, there are many airports which did not meet the target. Summer 2012 saw an improvement in the slot adherence, which reversed towards the end of the year, especially in December. NM will discuss any network considerations with the state and service provider concerned:



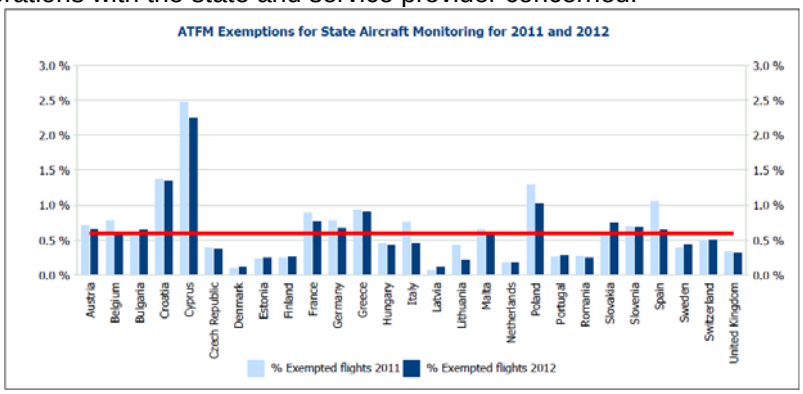
4.2. Adherence flight plan suspensions

The percentage of flights suspended by FAM (Flight Activation Monitoring) but which were activated by airborne data received whilst temporarily suspended was 0.3% in 2012. The graph shows the top airports where such situations occurred, as well as the percentage of these flights within the total number of flights at that airport. NM is currently reviewing the network impact of cases where flight plan suspension is ignored. It will work with the ATS unit at the airport concerned whose responsibility it is to ensure adherence.



4.3. ATFM Exemptions

The overall European 2012 percentage of 0.53% is below the target of 0.6%. However, there are twelve States in 2012 that granted exemptions in excess of 0.6% of the State's annual departures. NM will discuss any network considerations with the state and service provider concerned.



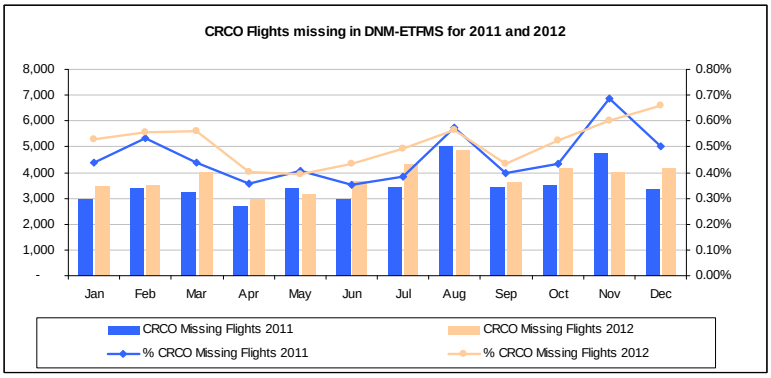
4.4. Missing flight plans

The missing flight plan methodology compares the following two flight data sources:

- CRCO civil IFR flights operated by aircraft above two tons,
- DNM operational systems (ETFMS, Filed Tactical Flight Model).

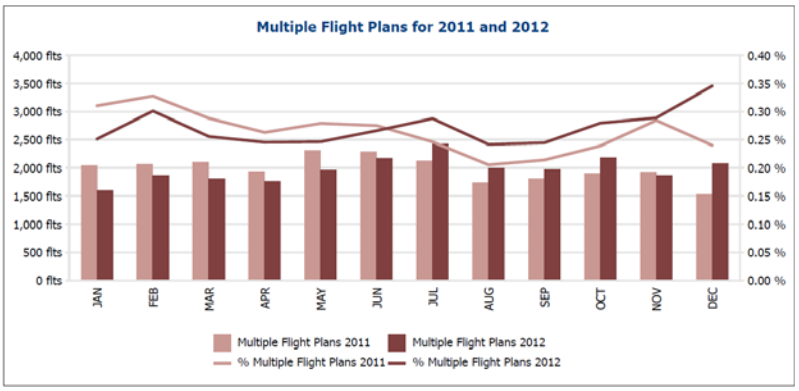
This graph presents the evolution of the number and percentage of CRCO flights having no equivalents in DNM-ETFMS database.

There is continuing work to improve the algorithm that is correlating the flights between the two platforms, such as elimination of unmatched cases due to certain profile changes (e.g. in-flight diversions). The aim is to analyse in 2013 the flights that had entered the European airspace without filing any flight plan, evaluate the network impact and take any follow-up action.



4.5. Multiple flights

NM is using the data from Flight Activation Monitoring to identify possible multiple flight plans. The graph below presents the evolution of numbers and proportion of these flights within the total traffic. NM is currently reviewing the causes and the network impact of such cases.



SECTION 5: CONCLUSIONS

With traffic decreasing by 2.6% and ATFM delays decreasing by 40% compared to 2011, the effective capacity indicator increased by 6% over the whole European network reaching the highest value ever recorded. Several ACCs achieved better results than foreseen in the capacity plans, but a number also under performed.

En-route ATFM delay was 0.63 minutes per flight, the best performance for some years. Without industrial action it would have been 0.57 minutes per flight. Airport ATFM delays were 0.48 minutes per flight. Both en-route and airport delays were the lowest for 5 years. NM, through direct actions, reduced delays by 730,000 minutes ensuring the network achieved the interim target of 0.7 minutes per flight.

The network suffered more from the industrial actions than in 2011 as well as challenging social difficulties in Oslo and Portugal, and these issues are likely to continue in 2013. However, the impact of these social difficulties was still less than the Greek social situation of 2011. The efforts at network manager level kept the delays at minimum during such capacity shortages (strikes/social issues) but such tactical delay mitigation initiatives have a flight efficiency and environmental cost for airlines.

The EURO 2012 football tournament and the London Olympics were the two major “special events” of the season. The increased traffic in Poland, Ukraine and the UK was handled with little or no network delay. This was achieved through excellent planning and cooperation in Poland, Ukraine and UK with the Network Manager.

Weather caused less delay than in previous years.

Flight efficiency continues to improve with a reduction of 0.26 percentage points in the flight planning efficiency indicator since 2009, close to the target of 0.3 percentage points reduction. However the gap between airspace design and last filed flight plan indicators has increased in 2012. Actions are necessary to be taken by all partners involved - ANSPs, Military, Airspace Users - to improve the airspace utilisation.

NM continued in 2012 to monitor the causes, impact and adherence to ATFM measures. Work is going on in improving the process, assess the network impact and take follow-up action. These improvements are part of the actions taken by the EC and NM to make the process better known to the Member States.