

IP tracking methodology at INRIA

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Plan

Introduction

INRIA in a nutshell : a knowledge provider

Knowledge and technology transfer at INRIA

Key legal issues and responsible open source development

Assumption of « good practices »

Legal status of CBCD Software

A definition

Standardisation need

INRIA's implementation of a Qualipso prototype methodology for IP Tracking

Palette EC joint research consortium Use Case

Conclusion



Introduction 1/2

INRIA = National Institute for Research in Computer Science and Control



3,900 people

Information and Communication
Sciences and Technologies

- Search
- Experiment (software prototypes)
- Share and disseminate
- Create references (standardisation)

A public institution of a scientific and technological character

the dual authority :

Ministry of Research and the Ministry of Industry

€ 186 M Budget

8 research centers



Introduction 2/2

Knowledge and technology transfer at INRIA

■ Knowledge provider: Scientific Papers and Technical Reports

- Open Archive HAL-INRIA launched in April 2005

■ Prototype Technology Provider

- Software components / libraries and prototype applications (component based)
- Standards candidates, specifications, and related software (reference of implementation)

W3C, IETF (OLSR, FLUTE), IEEE/IUT (JPEG 2000 ...)

- Some direct Licensing (proprietary and open source)
- Toward big company, SME and spinoff
- A FSF's projects contributor i.e.
 - Optimization of GCC
 - MPFR (multiple-precision floating-point computations with correct rounding), now in GCC.
- <http://gforge.inria.fr> +1 600 projects (400 are open source), +6 000 registered users/developers



Key Legal Issues and responsible open source development

Assuming good practices (1/2)

- We assume “development in good faith” when it comes to use pre-existing components

Nevertheless, developers should be aware and informed that advanced code reuse detection technologies (blackduck, fossology, palamida, etc ...) can prove unfair practices or counterfeiting of that kind; “development good practices” must be the rule and other practices should be strictly prohibited.

This means, for example, that

- **Developers do not**
 - delete existing headers
 - do not modify licence attached to external components, without formal authorisation of the IP owners of the external components.
 - try to hide the origin of external code, by reengineering it, changing the names of variables or doing other non authorised practices.

Key Legal Issues and responsible open source development

Assuming good practices (2/2)

- **Developers have to**
 - **Respect license provisions** *Developers should respect the terms and provisions of licences attached to software components they use. Training to foster their awareness of IP issues should be organised.*
 - **Avoid licenses incompatibility** *when licenses that are attached to two (or more) components have contradictory provisions, when considered as a whole - a situation known as licenses incompatibility - further legal and technical analysis or actions must be taken to allow software exploitation.*
 - **Respect other contracts/grants or IP assets attached to components** *i.e. confidentiality provisions, special access right to sponsoring states, patents, trademarks, moral rights of authors, etc...*

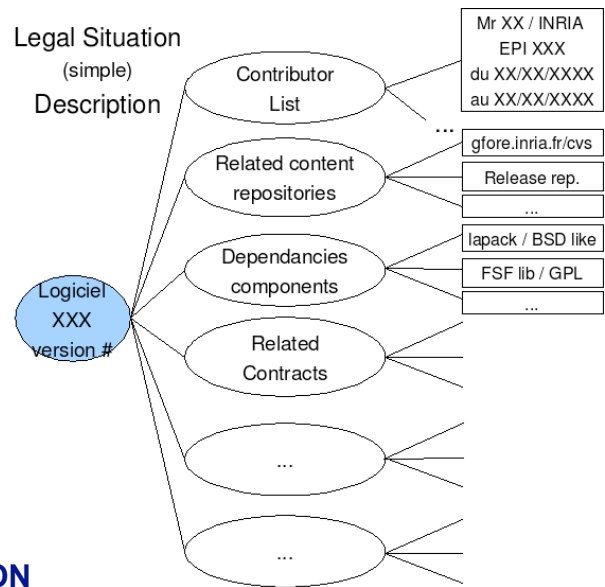
If a license attached to a file is a clearly defined legal object, it is not the case for a set of licences and other legal obligations attached to a (sometimes large) set of files and components.

This lead us to propose the notion of **LEGAL SITUATION of a Component Based and Collaboratively Developed software**

Legal Situation 1/5

Identify Rights and Obligations

- Identify all authors (?=contributors)
- Identify copyright owners (? employee)
- Identify all components, kind of dependencies
- (! wording “combined”, “link”, “derived”)
- Contractual issues (Consortium agreement)
- Applicable law (moral and patrimonial rights)
- Related content repository
- ...



➔ **NEED FOR A “HIGH LEVEL” FORMALISATION**

Legal Situation 2/5

First "Implementation"

- **Position in chain of rights**
 - Initial software
 - Derived software
 - Heterogeneous software
- **IP Owners**
 - Morals rights
 - Patrimonial rights
- **Legal condition of exploitation**
 - Exploitation is restricted by an agreement
 - Exploitation is restricted by law
 - Exploitation is restricted by license (s) or license components compatibility
 - Exploitation is restricted by another binding rule or legal provision
- **Other enforceable IP against software**
 - Patent
 - Trademark
 - copyright

QualiPSo project IST-FP6-IP-034763 Bay Fac		Date				
Position in chain of rights						
Initial software						
Component Name	Status	Composition Rules	Version	Localisation	Licence	Comment
	Original work					
Derived software						
Component Name	Status	Composition Rules	Version	Localisation	Licence	Comment
	Modified anterior work					
Heterogeneous software						
Component Name	Status	Composition Rules	Version	Localisation	Licence	Comment
1. XXX	Original work	To be defined	To be defined	XX.zip/XX	GPL v2	XXX
2. XXX	Original work	To be defined	To be defined	XX.zip/XX	GPL v2	XXX
3. XXX	To be defined	To be defined	To be defined	XX.zip/XX	GPL v2	XXX
4. XXX	To be defined	To be defined	To be defined	not defined yet	To be defined	To be defined
5. XXX	To be defined	To be defined	To be defined	XX.zip/XX	LGPL	XXX
6. XXX	To be defined	To be defined	To be defined	not defined yet	GPL v2	XXX
7. XXX	To be defined	To be defined	To be defined	XX.zip/XX	GPL v2	XXX
8. XXX	Not modified anterior work	To be defined	To be defined	XX.zip/XX	Dual licensed MIT, GPL v2	XXX
9. XXX	Not modified anterior work	To be defined	To be defined	XX.zip/XX	Creative commons	To be defined
10. XXX	Not modified anterior work	To be defined	To be defined	not defined yet	MIT	XXX
11. XXX	To be defined	To be defined	To be defined	XX.zip/XX	GPL v2	To be defined
12. XXX	Not Used	To be defined	To be defined	XX.zip/XX	GPL, LGPL	XXX
13. XXX	Modified anterior work	To be defined	To be defined	XX.zip/XX	GPL v2	To be defined
14. XXX	To be defined	To be defined	To be defined	XX.zip/XX	LGPL	XXX
15. XXX	To be defined	To be defined	To be defined	XX.zip/XX	LGPL, BSD like	XXX
Owner of Intellectual Property Rights						
Moral rights						
Author's Last Name	Author's First Name	Status	Affiliation organization	Comment		
XXX	XXX	work contract	XXX	specifications, development		
XXX	XXX	work contract	XXX	architecture, development		
XXX	XXX	work contract	XXX	development		
XXX	XXX	work contract	XXX	specifications, development		
XXX	XXX	work contract	XXX	specifications, architecture, development		
XXX	XXX	work contract	XXX	Development		
Patrimonial rights						
Organization	Contact Name	Comment				
XXX	XXX	XXX				
Legal conditions of exploitation		Other enforceable IPR against software				
Restricting Agreements	Patent					
Restricting Laws	Trademark					
Restricting licenses	Copyright					
Other binding rule or legal provision						
		Categories standardisation need				
		Low				
		Medium				
		High				

Legal Situation 4/5 Example from Eclipse IP Policy

IP Issues



As per the Eclipse IP Policy, the project verifies that:

- ... the about files and use licenses are in place as per the Guidelines
- ... all contributions (code, documentation, images, etc) have been committed by individuals who are Members of the Foundation and are abiding by the Eclipse IP Policy (training through Committer HOWTO)
- ... all significant contributions have been reviewed by the Foundation's legal staff – even if written by committers prior to joining Eclipse
- ... third-party libraries, have been documented in the release and reviewed by the Foundation's legal staff
- ... all contribution questionnaires have been completed
- ... the "provider" field of each plug-in is set to "Eclipse.org"
- ... the "copyright" field of each plug-in is set to the copyright owner
- See the IP Log at <http://www.eclipse.org/dsdp/dd/development/dd-log.csv>

Committers

abherent
dgaff
darin
kryall
ppiech
rohrbach
schan
tewillia
mkhouzam
fchouinar
vverma

Developer Contributions

Component	bug #	Contributor Name	Attachment #	Committer	Size (LOC)	Description
Memory		Ted Williams		tewillia	3785	Initial contribution of the org.eclipse.dd.debug.memory.rendering.traditional plugin.
Memory	146659	Warren Paul	44174	tewillia	26	Traditional memory rendering: Default files and use standard additional retrieved from
Memory	149092	Warren Paul	46168	tewillia	20	debugger
DSF		Pawel Piech		ppiech	1749	Initial contribution of the DSF framework.
DSF	153944	Michael Scharf	47938	ppiech	43	Patch to to make DSF specify its execution environment explicitly
DSF	153947	Michael Scharf	47940	ppiech	10	Patch to make DsQuery to use generics
DSF	153959	Michael Scharf	47950	ppiech	101	rename riverbed to dsf
MI	157530	Randy Rohrbach	50307	ppiech	728	Added simple initial MI Register Service and Adapter
Memory	158553	Alain Lee	69113	tewillia	58	Traditional memory rendering: General bug fix patch
Memory	158557	Alain Lee	69119	tewillia	120	Traditional memory rendering: General bug fix patch

Device Debugging Project

<http://www.eclipse.org/dsdp/dd/development/dd-log.csv>

Need for an implementation within Forges and dedicated platforms

- **Should be a resource within Forges** like bug tracker or source code versioning system
- **Import/Feed Legal situation meta-data**
 - By hand (5 months !)
 - Though data extraction with licence checker tools (5 days !)
- **Export functionality** to fit project copyright policy
 - <http://wiki.debian.org/Proposals/CopyrightFormat>
 - http://www.eclipse.org/projects/dev_process/project-log.php
 - Linux Foundation ?
- Release under open source licence (BSD like) **toward a standardization process**
 - Definition of normalised OSS licence denominations
 - High level description formalization / Composition rule
- Apply to a large set of source code from different development communities
- With a focus on **licence compatibility** issue

QualiPSo IP Tracking methodology (A1 WP1.4.1)

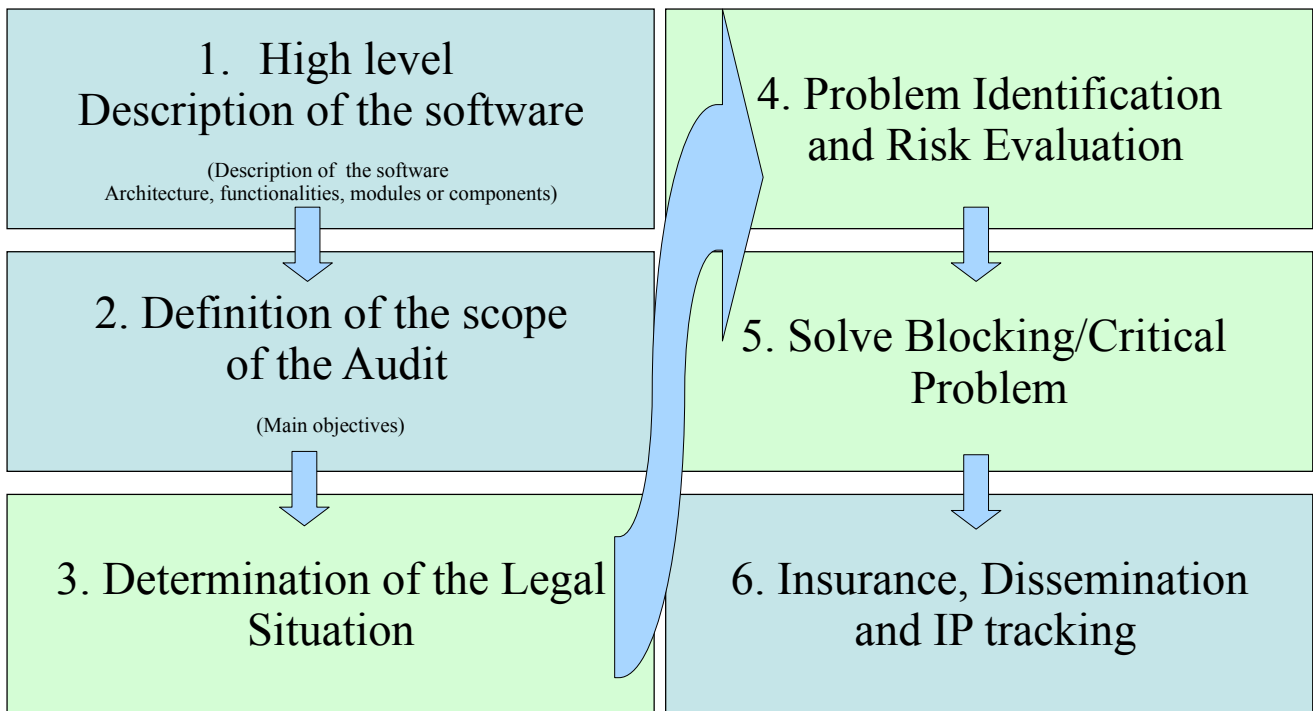
An implementation at INRIA

INRIA proposed a **generic IPT methodology within QualiPSo** EC funded research project and **implemented it for its own organisation.**

- The aim is to **set up an appropriate legal governance and process** to determine and follow the legal situation of a CBCD software during its development process in order to make sure that this legal status is compliant with the development and exploitation intends of the CBCD software editor.
- This IPT policy is actually **in test phase at INRIA** and based on :
 - **A training program** for developers and support staff to foster their awareness of IP tracking issues for CBCD software
 - **a multi-skilled team** composed of technical staff, legal persons and technology transfer officers in charge of the legal governance of the software development
 - An IP tracking methodology **using software tools** (i.e. FOSSology license checker)

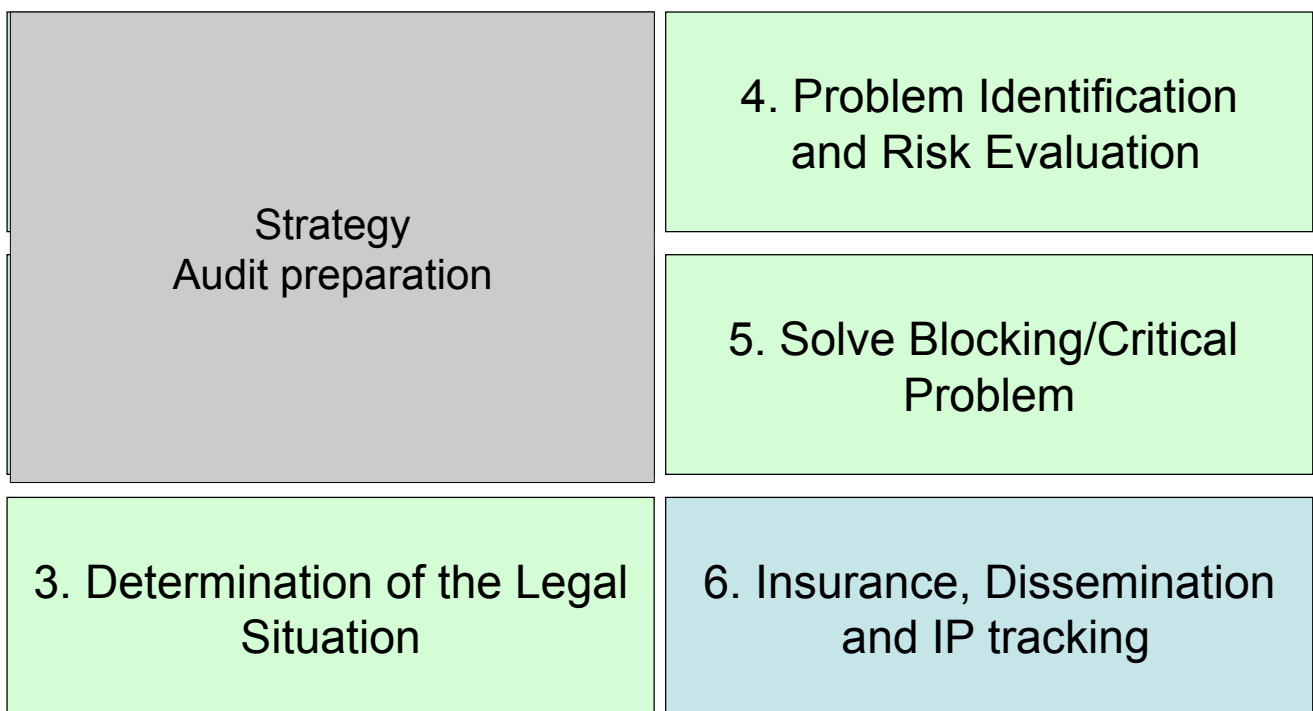
QualiPSo IP Tracking methodology

An audit module based on 6 generic steps



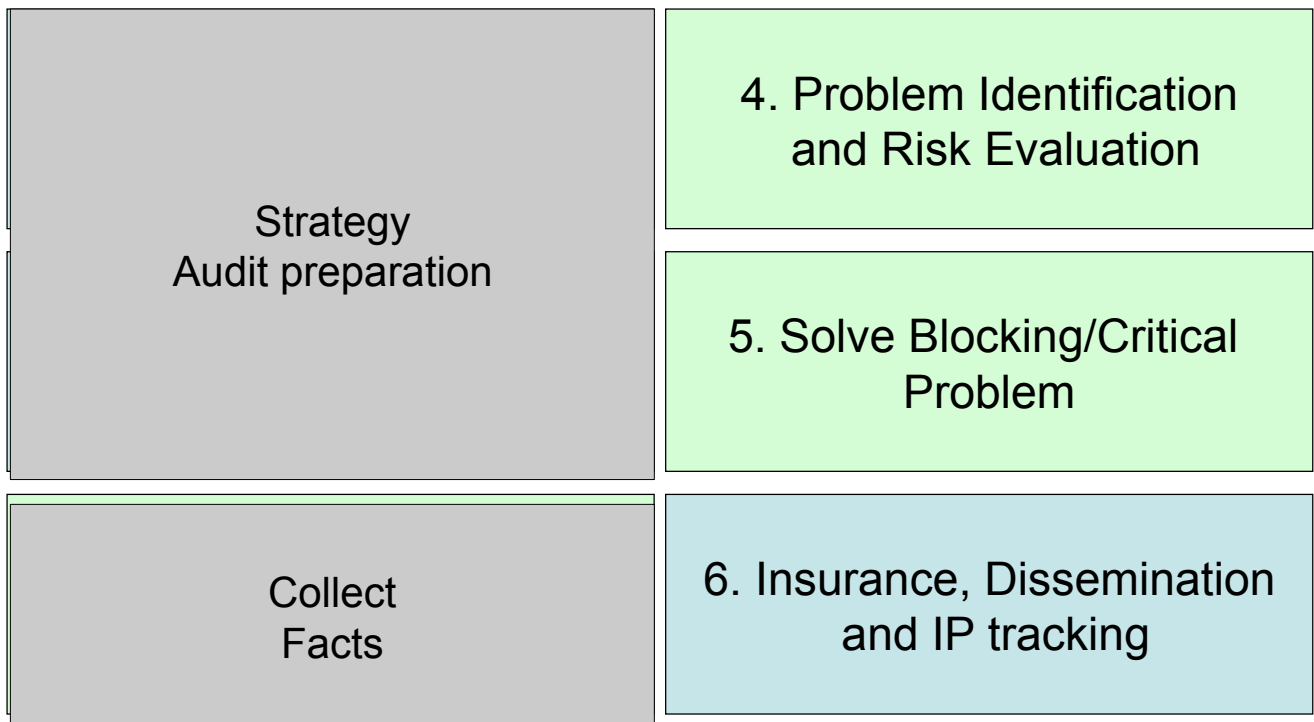
QualiPSo IP Tracking methodology

An audit module based on 6 generic steps



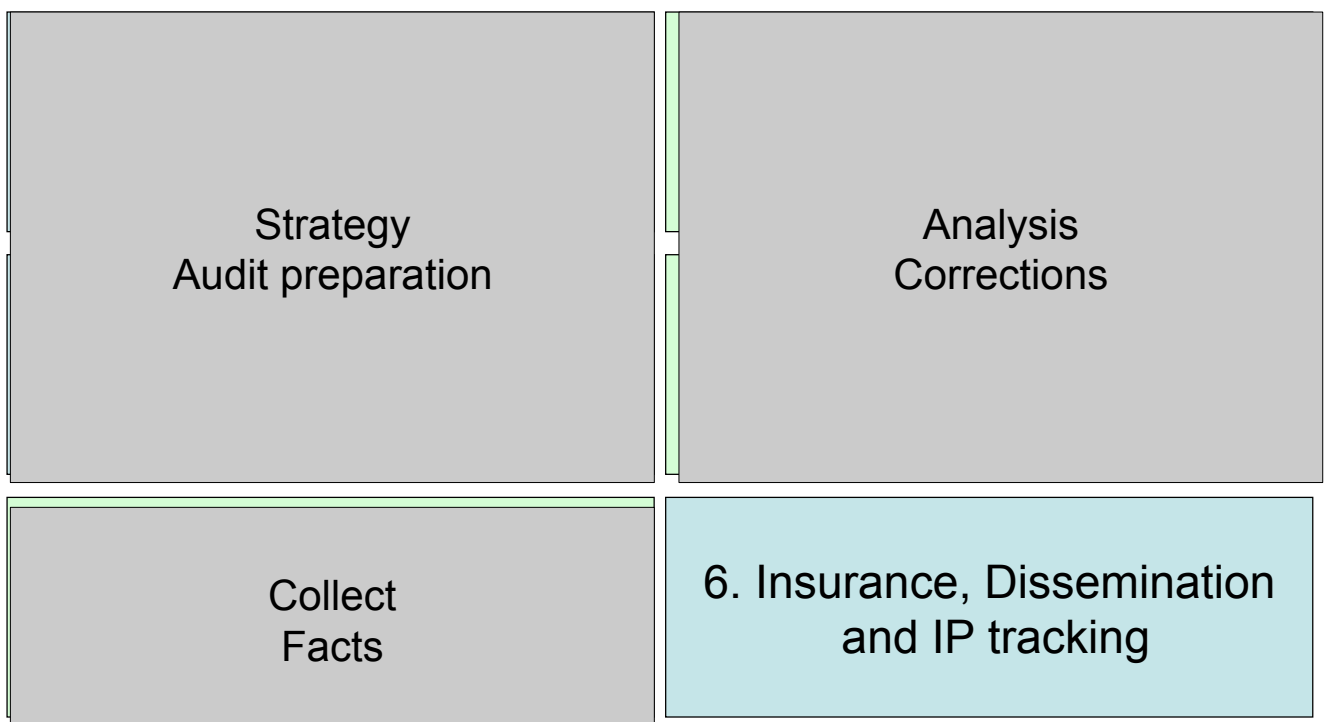
QualiPSo IP Tracking methodology

An audit module based on 6 generic steps



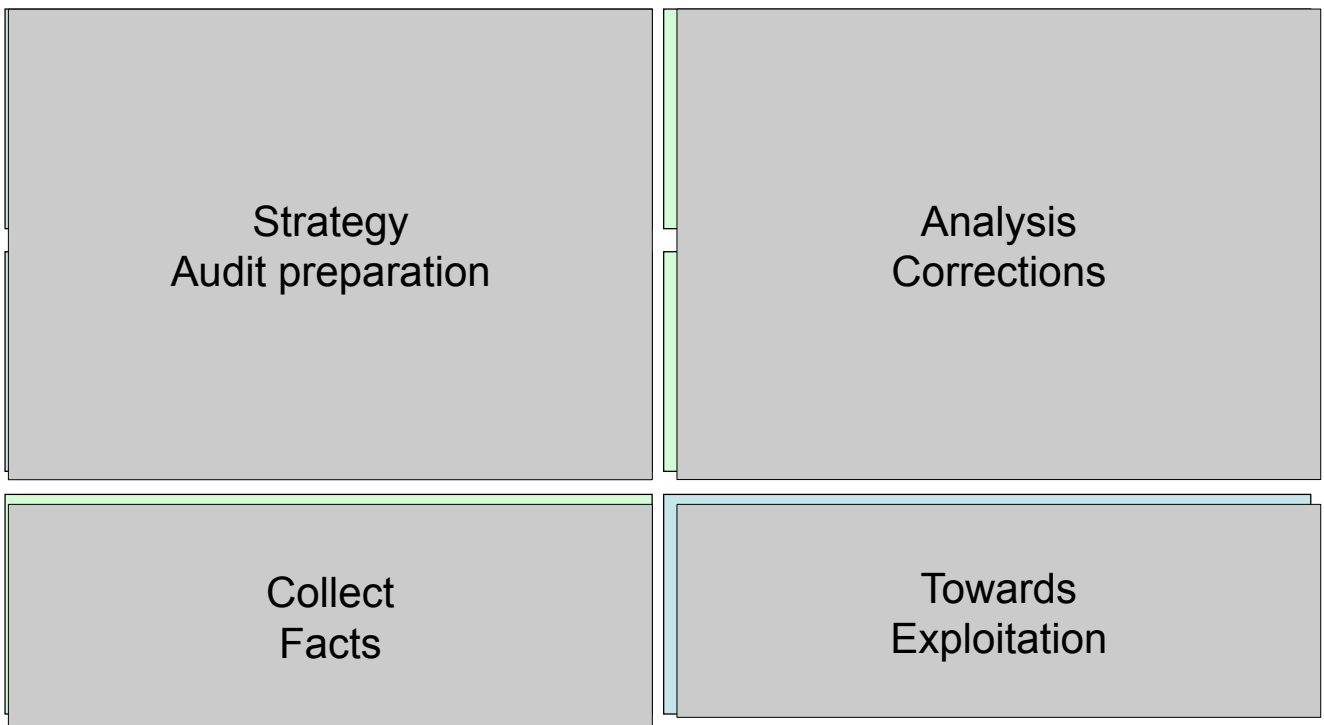
QualiPSo IP Tracking methodology

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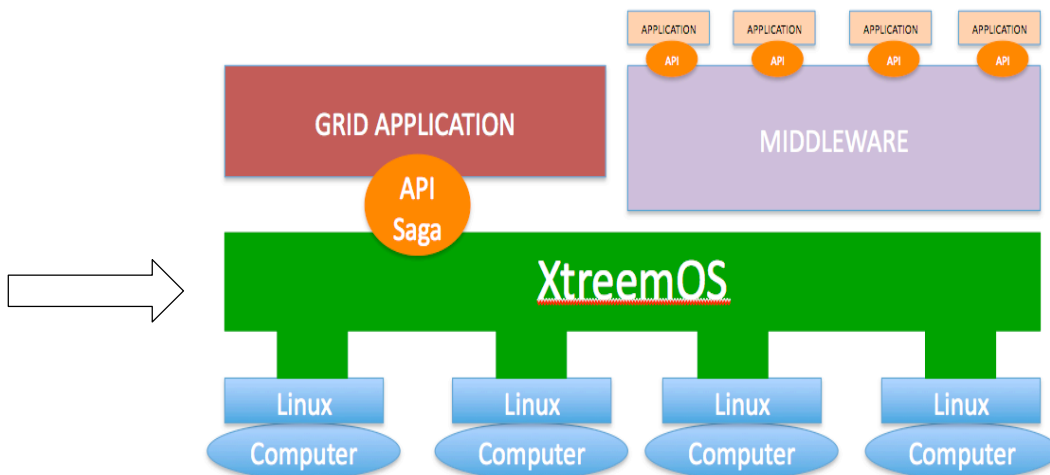
QualiPSo IP Tracking methodology

An audit module based on 6 generic steps



QualiPSo IP Tracking methodology

Phase 1 High level description example

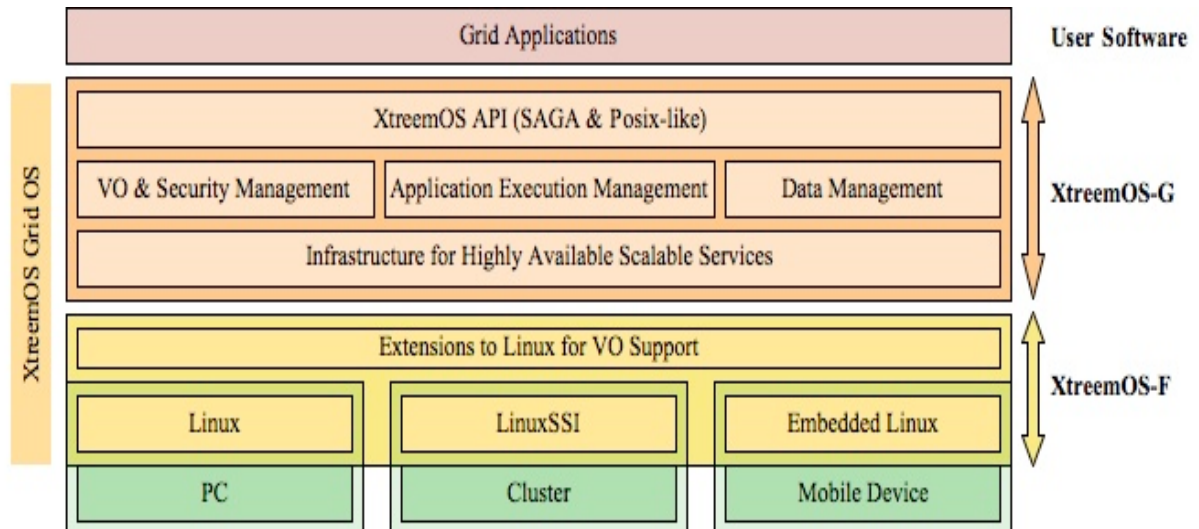


Example 1 : XtreamOS

Global position of XtreamOS layer in the software stack

QualiPSo IP Tracking methodology

Phase 1 High level description example

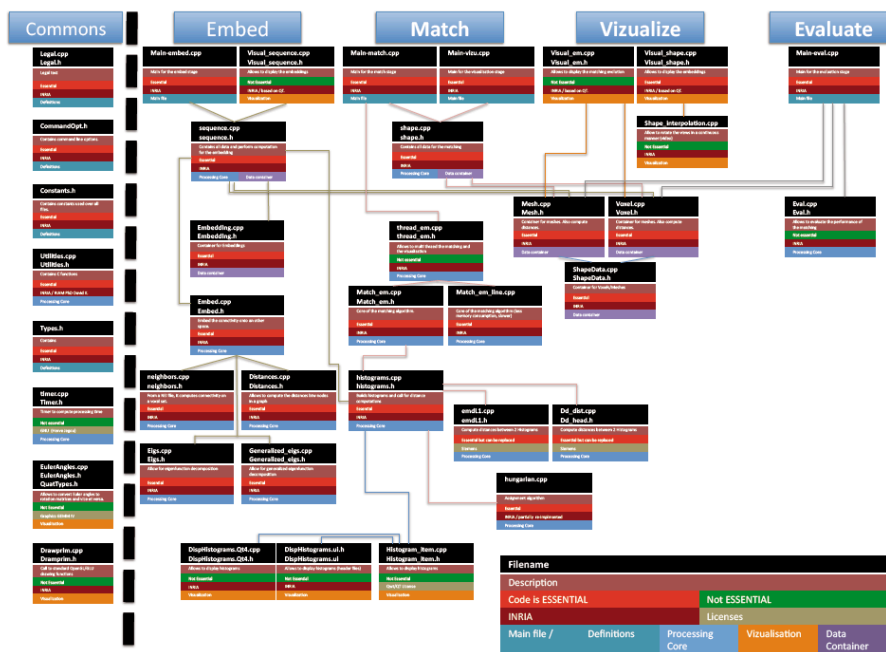


Example 1 : XtremOS

Refined high level description of the « XtremOS » layer showing main functional domains of two sub-layers (middleware closed sub-layer and system closed sub-layer)

QualiPSo IP Tracking methodology

Phase 1 High level description example



Example of a detailed « high level description » of a software

QualiPSo IP Tracking methodology

Phase 2 Defining the strategy

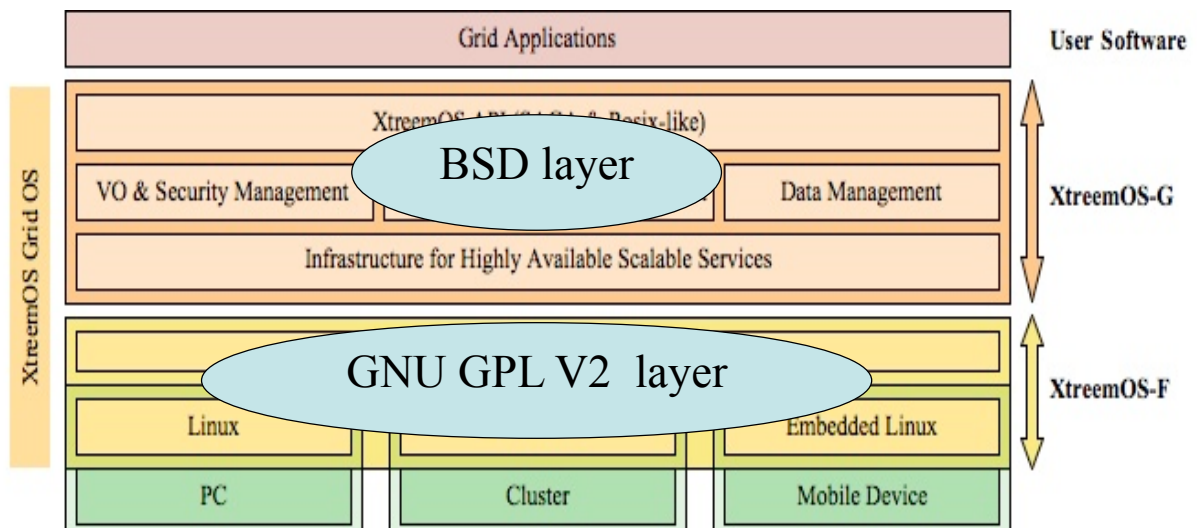
Phase 2 is aiming at defining the IP strategy in relation to the « high level description » of the software.

The licensing scheme of a CBCD software could be function of **which part of the software you consider**, and the related questions you might have to define and monitor through the IP tracking process would **depend on the development phase** and the licensing or exploitation schemes associated to each **relevant software layer** or functional domain. i.e. :

- if you planned not **to distribute the software**, but to give access to it as a “software as a service”, the legal issues are quite different as if you planned to distribute it under a permissive BSD like license.
- If you planned **to collaboratively develop the software**, issues are different of in-house development

QualiPSo IP Tracking methodology

Phase 2 Defining strategy of the XtreamOS use-case

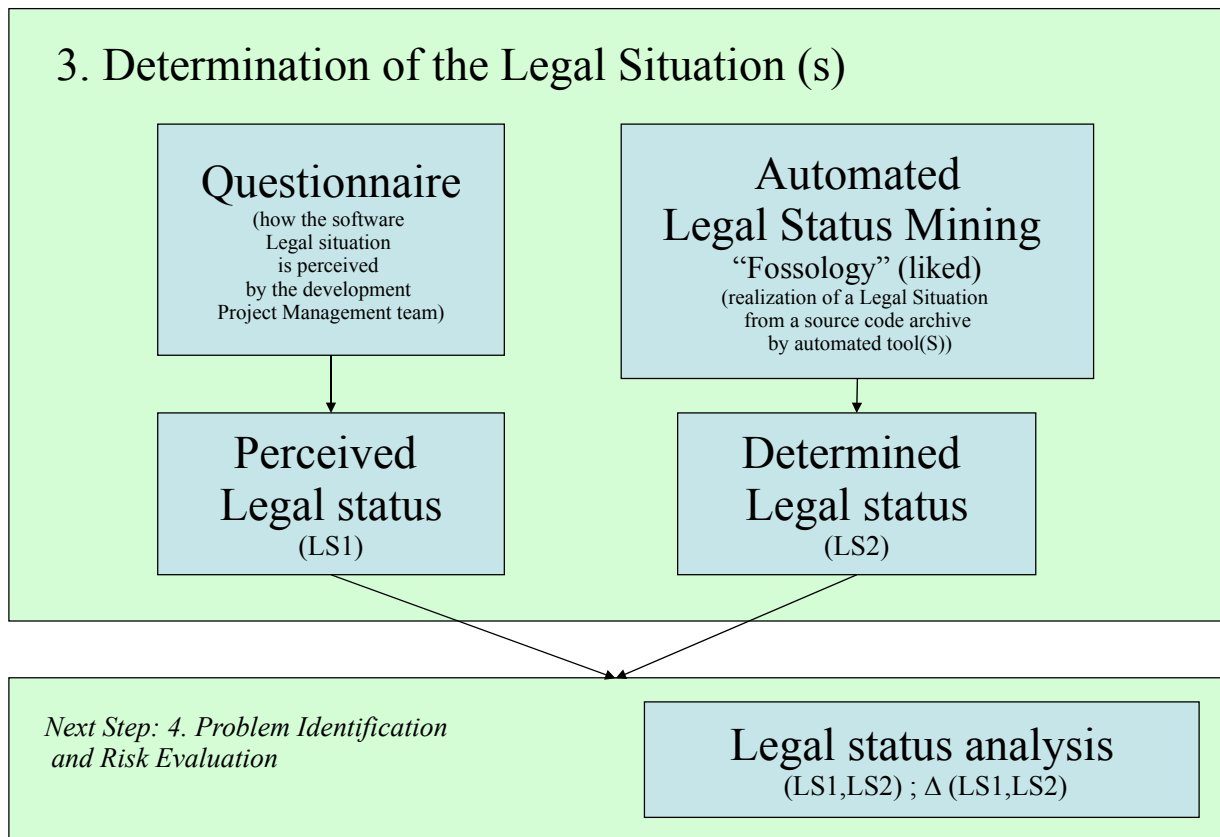


View of the « XtreamOS » licensing strategies

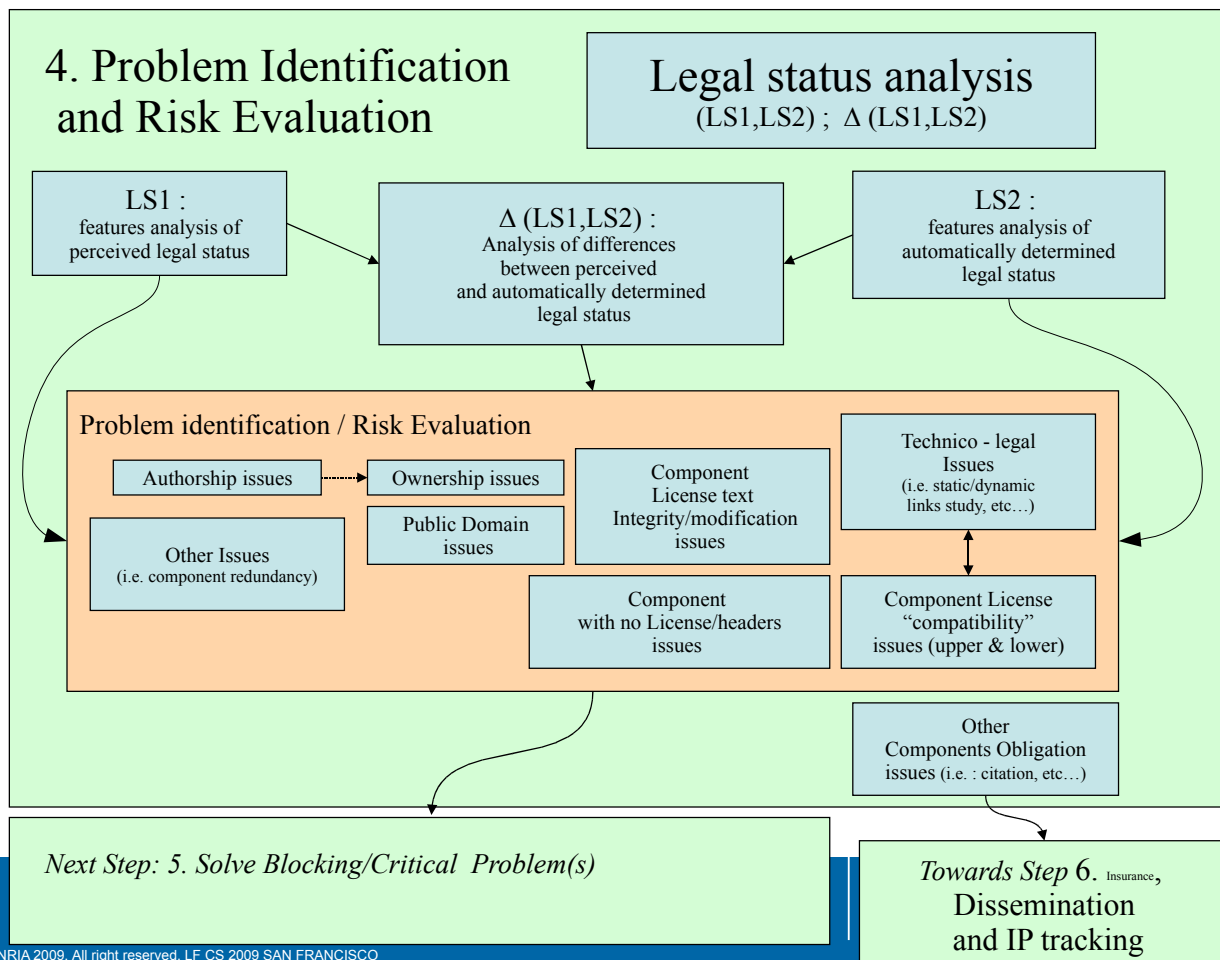
XtreamOS Grid support layer, XtreamOS-G : BSD licensing scheme

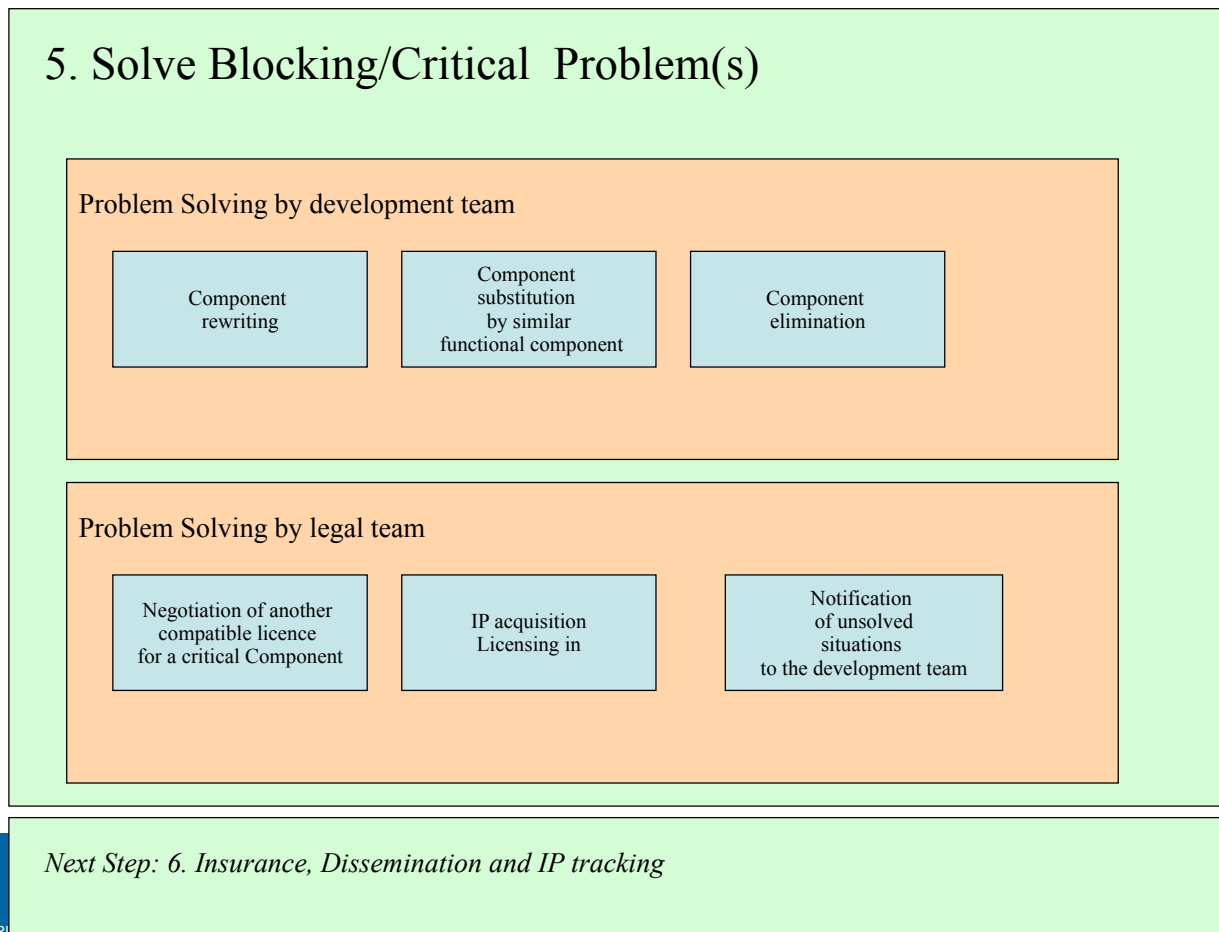
XtreamOS Foundation layer, XtreamOS-F : GNU GPL V2 licensing scheme

QualiPSo IP Tracking methodology (Phase 3)



QualiPSo IP Tracking methodology (Phase 4)





QualiPSo IP Tracking methodology The Palette use case

QualiPSo IP tracking methodology was used by “ Pedagogically sustained Adaptive LEarning Through the exploitation of Tacit and Explicit knowledge ” (PALETTE)

A European Commission funded research project of the 7th framework program (PCRDT)

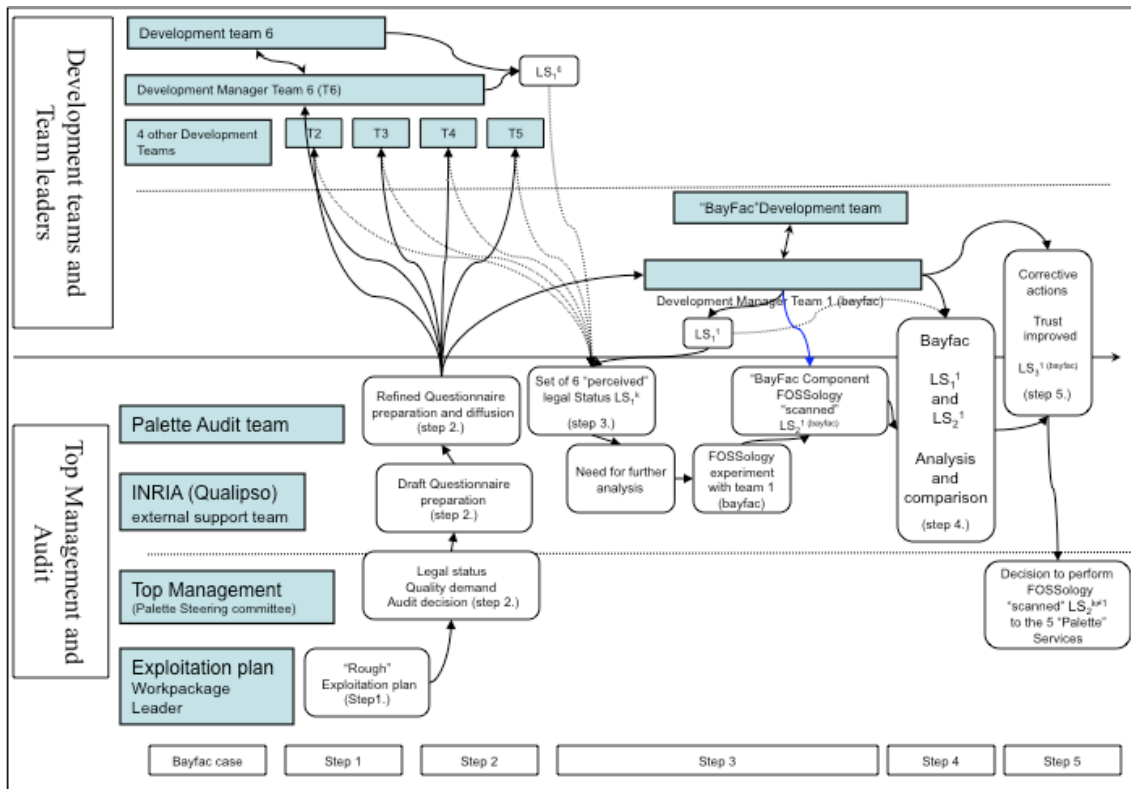
Phase 2 Objective : Project steering committee (governance level) to determine the better open source licensing strategy for the six software services developed within PALETTE.

<http://palette.ercim.org/> 14 parters (2 INRIA teams), 10 WorkPpackages with software, development 6 development teams.

Phase 3 Perceived legal status determined from a phase 3 questionnaire (LS1) and tool based audit (LS2 using fossology)

Phase 4 Discussions between each software service development leader and the steering committee (governance level) to validate encountered problem(s) and take appropriate actions
Phase 5.

Phase 6 Refined exploitation plan prepared.



Conclusion

Intellectual Property Rights Tracking Methodology for components based and collaboratively developed software is proposed within Qualipso EC Project and under testing at INRIA.

A **governance** or coordination level in charge of IP tracking issues

A **process** using FOSSology as license checker tool

A better defined and **enhanced quality software**

Toward a robust legal framework for OSS

■ LEVERAGE STATE-OF-ART TO FULFILL OPEN SOURCE ECOSYSTEM NEEDS

New legal tools : Initiative like CeCILL family - compliant to European legal framework

(Define applicable law and comply with liability regulation)

New Audit technologies or tools (FOSSology, etc...),

New insurance tools for residual risk (Lyods of London and OSRM ...)

■ BUILD APPROPRIATE LEGAL FRAMEWORK AND PROCESS

Methodologies (IP Tracking, Audit, Risk analysis)

Dedicated IP Management Tools

Skills and team building

■ AIMING TO INCREASE TRUST IN CBCD SOFTWARE

■ IMPROVE LEGAL SAFETY FOR CONTRIBUTORS, CUSTOMERS, SERVICE AND PRODUCT PROVIDERS



References and contact informations

■ References

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ROUSSEAU
http://libresoft.es/Activities/Research_activities/downloads/fosdem2008/papers/INRIA-GR_20080218-final.pdf
- Guide de diagnostic du logiciel (INRIA Internal document, DTI/SPIV 2006) GRATEAU and FONTAINE
- Toward an open-source technology transfer model DALLE and ROUSSEAU, Proceeding of the 4th Workshop on Open Source Software Engineering
- **IP Tracking: A methodology for Component Based and Collaboratively Developed software** M. FITZGIBBON, L. GRATEAU, G. ROUSSEAU Qualipso EC funded Project, Deliverable D1.4.1, Diffusion Status : Public January 26th, 2009

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