DPF MANAGER

INTELLECTUAL PROPERTY RIGHTS REPORT

Project acronym: PREFORMA

PREFORMA - Future Memory Standards

PREservation FORMAts for culture information/e-archives

EC Grant agreement no: 619568

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Barcelona, 2nd March 2015

Dear Josep,

I am writing this to confirm that we have been acting for you as legal advisers to Easy Innova and its collaborators with respect to the PREFORMA Tender and Project.

As we have already presented to you, *Id law partners* is a Spanish law firm that specialises in Intellectual and Industrial Property and Technology Law (ICTs), and both myself and my partner have extensively advised commercial, academic, public and private research projects with respect to this area of the law, including many European and nationally funded projects.

With my partner, we are authors of several publications on ICT law, and in particular on free and open source software licensing, including the materials for Legal Module of the Official Master in Free Software of the UOC and the Free Technology Academy, and several book chapters on this subject. I am also a fellow of the FSF-Europe, and co-editor of the International Free and Open Source Law Review.

Our CVs are attached and you will note that we also advise many FOSS projects, including both corporate and community projects.

As discussed with you, the agreement with you as to the scope of our activities with regard to PREFORMA cover the following activities, without prejudice to further activities as may be required by the project:

1. Review and analysis from the perspective of IP law of the proposed solution for PREFORMA project. Including

- Authorship and rights in the proposed solution
- Listing of proposed third party components and identification of the relevant licenses
- Analysis of the architecture of the proposed solution and interrelations between software components and
- Analysis of the license obligations and their compatibility with the required license for the solution
- Compliance with the licensing obligations of the different components of the solution with the required dual free software license GPL3+/MPL2+
- Advice on the implications and process for delivering the proposed solution to PREFORMA under the dual free software license GPL3+/MPL2+
- Advice on free documentation license (Creative Commons)

2. In the event your bid is accepted, we will also carry out the following.

- Training to project engineers on FOSS licensing and best legal practice in code management and development in a FOSS context
- Legal due diligence on delivered code, with report on authorship and rights, licensing and license compliance
- Update memorandum on the compliance of the delivered solution and documentation with the Tender specifications and contract
- Legal documentation and recommendations for publishing the resulting solution under the required license

We have already carried out the first part of this work and we attach for your attention the report we have prepared with respect to licensing of the proposed solution and conformance with the Invitation's requirements.

We will further discuss with you the scope of the work, in the event of winning the tender. Given our specialty, we are open to further requests for legal advice and assistance with respect to this project.

We look forward to working with you, and wish you the best in the Tender.

Yours sincerely,

Malcolm
Partner

Easy Innova, SL

Tender for PREFORMA

Preliminary IPR and licensing Report

2nd March 2015

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CONFIDENTIAL

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1. OBJECTIVE

This report is provided to Easy Innova SL in the context of the Invitation for Tender of the PREFORMA project (Grant Agreement 619568) to develop new solutions addressing the need for European memory institutions to gain full control over the technical properties of digital content intended for long-term preservation.

The objective of this report is to respond to certain legal and licensing requirements set out in the Invitation to Tender with respect to the solution proposed by Easy Innova called "***DPF Manager***".

In particular, we are asked to comment on the compatibility of the components to be included in or distributed with the proposed solution with the required dual license of the results (GPL3+/MPL2+ - see Section 2).

At this preliminary stage, we only comment on the licensing arrangements for software delivered under the Tender, we do not comment on requirements for digital assets and compliance with open file formats and the documentary requirements[1].

Structure

- Section 2 of this report outlines the licensing requirements of the Invitation ("Invitation Requirements")
- Section 3 outlines the structure of the proposed Conformance Checker and its component parts (to be read with Annex 3)
- Section 4 sets out our analysis of the legality of the proposed licensing arrangements, and the conformance with the Invitation Requirements
- Section 5 sets out our conclusions

Summary

In conclusion, our opinion is that:

1. The structure of the proposed project is not just technically but also "legally" modular, such that the different major blocks or parts of the solution are independent works.

2. The licenses of the third party components proposed to be included in the DPF Manager are compatible with the project dual license GPL3+/MPL2+.

3. Accordingly, the results of the project may be delivered to and by the PREFORMA project under this dual license GPL3+/MPL2+.

4. Easy Innova must comply with the licensing obligations on third party components in the Checker Environment as to attribution, licensing information and source code.

[1] We understand all documents to be delivered under the Project are of new creation, accordingly the authors will be able freely to license them under the CC licen se required by the Invitation.

2. INVITATION REQUIREMENTS

Section 5.1 of the Invitation to Tender requires that

> *The software and digital assets delivered by tenderer are made available under the following IPR conditions:*
>
> *All software developed during the PREFORMA project must be provided under the two specific open source licenses: "GPLv3 or later" and "MPLv2 or later".*
>
> *All source code for all software developed during the PREFORMA project must always be identical between the two specific open source licenses ("GPLv3 or later" and "MPLv2 or later").*

Section 8 of the Invitation to Tender further indicates requires:

> *The PREFORMA project will use copyleft licenses for all developed software and associated digital artefacts. All software will be provided under both "Mozilla Public License (MPL) v2.0 or later" and under "GNU General Public licence 3.0 (GPLv3) or later".*

As a clarification for this statement (see Annex 2), the Inviters have indicated:

> ***1.*** *All code (software and libraries) distributed as part of the Conformance Checker, either developed during the project or already developed by the supplier and contributed to PREFORMA, is to be released under GPLv3++ and MPLv2++.*
>
> ***2.*** *All code (software and libraries) distributed as part of the Conformance Checker, either developed during the project or already developed by a third party and contributed by the supplier to PREFORMA, has to be freely available in open source form under generally recognized free software licenses compatible with the GPLv3++ and MPLv2++ to enable redistribution of the whole package under these two licenses.*
>
> *All code (software and libraries) required to compile and/or execute the Conformance Checker in a production environment has to be freely available in open source form under generally recognized free software licenses compatible with the GPLv3++ and MPLv2++ to enable redistribution of the whole package under these two licenses.*
>
> …
>
> *In particular for the implementation checker, where the use of third party code has to be considered only under extraordinary circumstances and would require the explicit consent of the PREFORMA Consortium. The use of third party code for the subsidiary functions, i.e. shell, reporter, and metadata fixer, which are not the central objective of PREFORMA, could however be considered with a less restrictive view.*

Accordingly, the project partners are interested in confirmation that the proposed solution (according to its design, architecture and components, a preliminary version of which is set out herein), complies with this requirement.

3. The DPF Manager

The proposed DPF Manager solution is modular software solution for verifying the conformance of certain digital assets with TIFF format with established (and open) standards.

3.1. Main components

The main components of the DPF Manager solution are:

The Conformance Checker, includes

- **The 'Implementation Checker': this is the key component, which performs a comprehensive check of the standard specifications listed in the standard document.**
- The '**Policy checker'**: which allows for adding acceptance criteria, always compliant with the standard specifications, that further differentiates the properties of the file. This might for example include limiting conformance to PDF/A-1b. Or limiting the colors-space of TIFF-files to ECI-RGB or aRGB. Or limiting the audiovisual file to 'progressive scanned' video.
- The '**Reporter'**: which interprets the output of the implementation checker and policy checker and allows for defining multiple human and machine readable output formats. This might include a well-documented JSON or XML file, a human readable report on which specifications are not fulfilled, or a fool-proof report which also indicates what should be done to fix the non-conformances.
- The '**Metadata fixer'**: which allows for simple fixes of the metadata embedded in the file, making them compliant with the standard specification.

The Shell

- The **Shell**: The conformance checker should interface with other systems through a 'shell' which allows for interfacing multiple conformance checkers at the same time. This might in the future allow integrating the conformance checkers of different suppliers into one application. The shell provides the interface between the users (humans, other systems via APIs, etc.) and the conformance checker.

A more detailed description of the architecture and interactions of the proposed solution is set out in Easy Innova's Technical Specification Document.

The solution is developed in Java, and runs on the OpenJDK framework. It uses common libraries from the Apache free software project.

3.2. Third party components

DPF Manager is designed as modular software and is proposed include a number of third party software components. These are listed in Annex 3 and their position in the architecture and interaction with the other components are indicated.

Particular highlight must be given to the following technical aspects (legal aspects are considered in the next section):

1. The Shell is decoupled (from a logical point of view) from the Conformance Checker

2. There are no third party components in the Implementation Checker, which is the key component of the proposed solution. We understand the source code for this component will be of new creation.

3. The interactions between the Implementation Checker and other components of the platform are by way of exchange of data and not any logical dependency

4. LEGAL ANALYSIS

4.1. Ownership and licensing of the DPF Manager as a whole

The DPF Manager and its component parts are of a dual nature.

- On the one hand, the DPF Manager can be seen as a composed work. It will be a work that is the result of the composition or integration of several component parts, without the collaboration of the owners of those parts, in particular the third party FOSS components.

- However, from another perspective, Easy Innova will supervise, coordinate and divulge the DPF Manager as a work which is the integration of several parts (the components) of different authors from certain subcontractors whose work is merged into the new "whole". Thus the DPF Manager will also be a collective work, the exploitation rights in the work as a whole belong to the entity that edits and publishes this solution, accordingly Easy Innova

Accordingly:

- Easy Innova will be the rightsholder of the DPF Manager solution as a whole and thus has the rights to choose the license for publishing the software.

- This license choice is only preconditioned by license rights and obligations, if any, over third party components included in the solution, in particular obligations regarding derivative works and composed or collective works.

- **If there are no obligations imposed by such third party licenses, then the rights holder can freely choose the license of its choice for the solution, and deliver the same to the PREFORMA project under the required dual license (GPL3+/MPL2+)**

- Even if there are no obligations as to license choice imposed by such third party components, it will be essential for Easy Innova to comply with the obligations of those licenses as to documentation, attribution, and access to source code.

The next section looks at third party license conditions and their impact on the proposed solution

4.2. Third party components and their licenses

Even though Easy Innova may be rightsholder of the DPF Manager "as a whole", this solution incorporates third party components, which are under FOSS licenses (See table in Annex 3). This section looks at the obligations over the third party components in the process of developing the software programs and their impact on outbound licensing.

As a general note, all free software licenses permit reproduction (copying) and transformation with no further obligations. Accordingly, the inclusion of these components at development stage, prior to distribution, is permitted in all circumstances according to their licenses (whatever their licenses).

As the software solution is proposed to be distributed, we need to analyse the obligations arising with respect to the distribution right. In many cases, when incorporating copyleft licenses (GPL, LGPL), license incompatibilities can arise, i.e. licensing terms that conflict with one another as to how to redistribute the integrated work. Two different copyleft licenses are incompatible, but there are several "compatibility" mechanisms that can help.

One issue that also needs further comment relates to the extent the new works generated by the project can be considered derivative works and composed works of the third party FOSS works. According to the comments set out in Section 3 above:

- As far as we are aware, the works to be created by Easy Innova are new works (i.e. not modifications of the FOSS components), but use the FOSS components as libraries.

- Accordingly, we need look at the requirements as to the distribution of composed (or "collective", in anglosaxon copyright terms[2]) works incorporating or dependent on these libraries.

A) The Conformance Checker

As noted above, the Conformance Checker does not include any third party dependencies, and this component interacts via data exchange with the Shell. ***Accordingly, there are no third party license obligations with respect to the development and distribution of the Conformance Checker code. This code may be freely distributed under the GPL3+/MPL2+ license.***

B) The Shell

The Shell does include certain third party dependencies, required for implementing the solution. The FOSS licenses are (including Netty sub-dependencies):

License	Description	Compatibility
ASL2	Apache Software License 2.0. *Permissive* FOSS license that allows any use and	This license is compatible with GPL3+ and the

[2] Note that Easy Innova is a Spanish company, and Spanish copyright law (propiedad intellectual) will apply to the determination of ownership of rights and exercise of rights by Easy Innova.

	includes obligations to maintain the disclaimer on redistribution, certain legal information, and grant a patent license to users.	MPL2+ licenses, both in compiled (static linking) or non-compiled/dynamic linking scenarios
GPL2+ with Classpath Exception	GPL Versions 2+ is a strong copyleft license (requiring to maintain this license and provide access to source code to these components and, arguably, to components that use this code. However, the Classpath Exception provides that this obligation does NOT extend to "works that use" the component, so exception has an effect similar to LGPL (see below).	This license is compatible with GPL3+ and the MPL2+ licenses, for non-compiled/dynamic linking scenarios
BSD3:	Berkely Software Distribution. Permissive FOSS license that allows any use and only obligations to maintain the disclaimer on redistribution	Idem
MIT	X" family license. Permissive FOSS license that allows any use and only obligations to maintain the disclaimer on redistribution	Idem
LGPL2.1	Lesser GNU General Public License, Versions 2.1. "*Weak copyleft*" license that allows any use, and requires maintaining the same license on redistribution, making the component available to third parties under such terms (with source code).	This license does not affect works that "use" the component

Accordingly, none of these licenses are strong copyleft licenses which would **oblige** Easy Innova to distribute part or all of the Shell under the GPL2 or 3 (or GPL2+ or GPL3+), which could in certain circumstances be incompatible with the Invitation Requirements.

On the other hand, none of these licenses are incompatible with the GPL3+ or the MPL2+, so **Easy Innova *is also free to license the Shell code of new creation (its components and the Shell as a whole), under the required GPL3+/MPL2+ license.***

C) Environment and build/documentation tools

The runtime environment for the solution is the OpenJDK (running on free software operating system such as GNU/Linux). This runtime environment is free software, distributed under the GPL2+Classpath Exception license, commented above. This license (a) does not affect the software executing on this environment and (b) even if it did, the Classpath Exception provides that such software is not affected by the GPL2 obligations.

The solution will require the use of Apache Commons libraries, which are distributed as part of the Apache Foundation software, under the aforementioned permissive ASL2.0 license. This license does not affect the works that use these libraries.

The same can be said for the tools that are provided or conceived to be used in conjunction with the building, configuration and documentation of the proposed solution

- Build and configuration tools (Ant, Test) – Under the ASL2.0 license
- Documentation tools (Javadoc) – under the GPL2+Classpath Exception.

5. CONCLUSIONS

On the basis of our analysis of the proposed solution components and architecture, and the documentation we have been provided with (listed in Annex) our opinion is:

- Conformance Checker: ***The Conformance Checker as proposed is an independent work of new creation and there are no third party license obligations with respect to the development and distribution of the Conformance Checker code. This code may be freely and legally distributed under the GPL3+/MPL2+ license.***

- Shell: ***Consortium is free to distributed the Shell code of new creation (its component parts and the Shell as a whole), under the required GPL3+/MPL2+ license. There are no incompatible license dependencies.*** *Easy Innova must comply with third party license obligations (documentation, attribution) with respect to the third party libraries.*

- Tools and runtime environment*:* ***These tools and runtime software are provided as is, without modification, and are under licenses compatible with licensing the above components (Shell and Conformance Checker) under the required dual GPL3+/MPL2+ license.*** *Easy Innova must comply with third party license obligations (documentation, attribution) with respect to these platforms and software*

Annexes

Annex 1

Structure of DPF Manager (pdf)

Annex 2 – Licensing clarification

The PREFORMA Consortium
- empathizes with the concerns raised in the joint letter by you, the PREFORMA suppliers, dated 19th of February 2015 [the joint letter], and in order to alleviate any concerns that you may have,
- releases the following statement to clarify the situation.

1. All code (software and libraries) distributed as part of the Conformance Checker, either developed during the project or already developed by the supplier and contributed to PREFORMA, is to be released under GPLv3++ and MPLv2++.

2. All code (software and libraries) distributed as part of the Conformance Checker, either developed during the project or already developed by a third party and contributed by the supplier to PREFORMA, has to be freely available in open source form under generally recognized free software licenses compatible with the GPLv3++ and MPLv2++ to enable redistribution of the whole package under these two licenses.

All code (software and libraries) required to compile and/or execute the Conformance Checker in a production environment has to be freely available in open source form under generally recognized free software licenses compatible with the GPLv3++ and MPLv2++ to enable redistribution of the whole package under these two licenses.

The use of third party code must however be understood within the framework of the PREFORMA challenge and the need to research, innovate and develop a solution not existing today; otherwise there would be no need for the PREFORMA-project. It follows from this that the use of third party code is restricted, not really by legal or technical issues, but rather by the lack of proper solutions.
The use of third party code under other open source licenses should be an instrument enabling suppliers to devote the maximum of their resources to the developement of new code that is required by the Conformance Checker but does not yet exist. There is a risk however that an overly dependancy on third party code for realising the Conformance Checker could cause the project to end up as a mashup of existing software with little innovation value.
It follows that the possibilities for use of third party code for the core functionality, i.e. the implementation checker and the policy checker, is rather limited. In particular for the implementation checker, where the use of third party code has to be considered only under extraordinary circumstances and would require the explicit consent of the PREFORMA Consortium. The use of third party code for the subsidiary functions, i.e. shell, reporter, and metadata fixer, which are not the central objective of PREFORMA, could however be considered with a less restrictive view.
3. All code contributed to PREFORMA is expected to be organised according to a modular code architecture which isolates and separates the code of the program to

independent and interchangeable modules that can easily be modified, extended, and if necessary, replaced

Annex 3
Component Tables

id law partners

BGM&A Brugueras, García-Bragado, Molinero & Asociados

DPF MANAGER 3rd party libraries

(1) **As shown in the architecture diagram**

RUNTIME ENVIRONMENT AND COMMON LIBRARIES

Domain	Library	Licenses	URL	Module (1)	link
General libs	Apache commons	Apache 2.0	http://commons.apache.org/	General java utilities library (I/O, Math, etc..)	Dynamic linked
	Open jdk	GPLv2+CE	http://openjdk.java.net/	Base Java implementation	Dynamic linked

SHELL

Domain	Library	Licenses	URL	Module (1)	link
Network library	Netty	Apache 2.0	http://netty.io/	Shell > Interface module > Interfaces > Server interface	Dynamic linking
Json parser	google-gson	Apache 2.0	https://code.google.com/p/google-gson/	Shell > Configuration module	Dynamic linking
GUI interface	JAVA Fx	GPLv2+CE	https://www.java.com/en/download/faq/javafx.xml	Shell > Interface module > Interfaces > GUI interface	Dynamic linking
PDF	Apache PDFBox	Apache 2.0	https://pdfbox.apache.o	Shell >	Dynamic linking

			rg/index.html	Request dispatcher > Global report	
Log	Apache commons	Apache 2.0	http://commons.apache.org/	Shell > Message module	Dynamic linking
Netty dependencies	base64	Public Domain License			
	caliper	Apache 2.0 License			
	commons-logging	Apache 2.0 License			
	deque	Public Domain License			
	jboss-marshalling	LGPL 2.1 Licence			
	jsr166y	Public Domain License			
	jzlib	BSD 3 clause License			
	log4j	Apache 2.0 License			
	protobuf	BSD 3 clause License			
	slf4j	MIT License			
	snappy	BSD 3 clause License			
	webbit	BSD 3 clause License			

EXTERNAL TOOLS

Documentation	Javadoc	GPLv2+CE	http://www.oracle.com/technetwork/java/javase/documentation/index-137483.html	External tool to generate documentation from source code annotations	
Builder	Java ant	Apache 2.0 License	http://ant.apache.org/	External tool to build java apps	
Test	AntUnit	Apache 2.0 License	http://ant.apache.org/	External tool to define and execute unit tests.	