



Data, Information and Process Integration
with Semantic Web Services

DIP

Data, Information and Process Integration with Semantic Web Services

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WP 13: IPR Activities

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Analysis of the appropriate open-source licensing schemata, including those used for related WS and B2B standards

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EXECUTIVE SUMMARY

This deliverable gives an overview of open source licencing schemes, a comparison of common licences, and an analysis of their appropriateness for DIP.

Section 2 briefly explains the history of Open Source. Then, we introduce the definition of Open Source and contrast it with other, related definitions.

In section 3, we describe the different types of Open Source licences. We present the more commonly used ones in more details and we compare them.

Section 4 is concerned with the discussion of open source licencing: first, we examine the licencing schemes used by the main relevant standardisation bodies; then, we discuss the appropriateness and acceptability of various licences from DIP's and DIP partners' perspective.

We conclude with a recommendation that DIP open software should be dually licenced; it should be released under whatever licence the copyright holder decides, including the GPL, for the general public, and, for the DIP partnership, under a licence no stronger than the LGPL, and preferably under the X licence..

Notice that most of the text in sections 2, 3 and 4.1 is excerpted from various sources, referenced at the end of this document, as indicated in the text.

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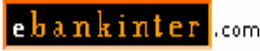



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1 INTRODUCTION

This deliverable gives an overview of open source licencing schemes, a comparison of common licences, and an analysis of their appropriateness for DIP.

Section 2 briefly explains the history of Open Source. Then, we introduce the definition of Open Source and contrast it with other, related definitions.

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2 OPEN SOURCE SOFTWARE

2.1 A brief history

(That section is mostly excerpted and summarized from [1], a paper by Bruce Perens, one of the founder of the Open Source Initiative).

The concept of free software is an old one. When computers first reached universities, they were research tools. Software was freely passed around, and programmers were paid for the act of programming, not for the programs themselves. Only later on, when computers reached the business world, did programmers begin to support themselves by restricting the rights to their software and charging fees for each copy. Free Software as a political idea has been popularized by Richard Stallman since 1984, when he formed the Free Software Foundation and its GNU Project. Stallman's premise is that people should have more freedom, and should appreciate their freedom. He designed a set of rights that he felt all users should have, and codified them in the GNU General Public Licence or GPL. Stallman punningly christened his licence the copyleft because it leaves the right to copy in place. Stallman himself developed seminal works of free software such as the GNU C Compiler, and GNU Emacs. His work inspired many others to contribute free software under the GPL. Although it is not promoted with the same libertarian fervor, the Open Source Definition includes many of Stallman's ideas, and can be considered a derivative of his work.

The Open Source Definition started life as a policy document of the Debian GNU/Linux Distribution. Debian, an early Linux system, was built entirely of free software. However, since there were other licences than the copyleft that purported to be free, Debian had some problem defining what was free, and they had never made their free software policy clear to the rest of the world. Bruce Perens was the leader of the Debian project, at that time, and he addressed these problems by proposing a Debian Social

Contract and the Debian Free Software Guidelines in July 1997. The Social Contract documented Debian's intent to compose their system entirely of free software, and the Free Software Guidelines made it possible to classify software into free and non-free easily, by comparing the software licence to the guidelines.

Debian's guidelines were lauded in the free software community, especially among Linux developers, who were working their own free software revolution at the time in developing the first practical free operating system. When Netscape decided to make their web browser free software, they were advised to comply with Debian's guidelines for it to be taken seriously as free software.

Eric Raymond came up with the idea for Open Source. Raymond was concerned that conservative business people were put off by Stallman's freedom pitch, which was, in contrast, very popular among the more liberal programmers. He felt this was stifling the development of Linux in the business world while it flourished in research. He met with business people in the fledgling Linux industry, and together they conceived of a program to market the free software concept to people who wore ties. People like Larry Augustin of VA Research and Sam Ockman (who later left VA to form Penguin Computing) were involved in the effort.

Raymond felt that the Debian Free Software Guidelines were the right document to define Open Source, but that they needed a more general name and the removal of Debian-specific references. Perens edited the Guidelines to form the Open Source Definition and registered a trademark for Open Source so that its use could be coupled to the definition. Raymond and Perens then formed the Open Source Initiative, an organization exclusively for managing the Open Source campaign and its certification mark.

At the time of its conception there was much criticism for the Open Source campaign, even among the Linux contingent who had already bought-in to the free software concept. Many pointed to the existing use of the term "Open Source" in the political intelligence industry. Others felt the term "Open" was already overused. Many simply preferred the established name Free Software. However, the problem with that name is the dual meaning of "Free" in the English language – either liberty or price, with price being the most oft-used meaning in the commercial world of computers and software.

There was also – and still is – some debate between the Open Source Initiative and Richard Stallman's Free Software Foundation. Part, if not all, of the debate is about in the libertarian ideology defended by the Free Software Foundation and is reflected in the more or less restrictive nature of their respective definition of open (resp. free) software, and the protective nature of the licences they support.

2.2 Definitions

A common misconception is that much free software is public domain. Open Source programmes, however, are clearly copyrighted and covered by a licence, just a licence that give people more rights than a proprietary licence usually does. A public domain programme is one upon which the author has surrendered or lost his copyright and the rights attached to it. There is no licence: it is everybody's personal property to use it as they see fit. People and organisations can do whatever they want with public domain software: they can change its name, they can sell it if they want, they can even re-licence their own version of it, etc.

The Open Source Initiative ("OSI") defines Open Source as software that is distributed under a licence providing the following rights and obligations [3] (the comments in italics are excerpted or summarized from [1]):

Note that the Open Source Definition is not itself a software licence. It is a specification of what is permissible in a software licence for that software to be referred to as Open Source. To be Open Source, all of the terms below must be applied together, and in all cases.

<OSIdefinition>

2.2.1 Free Redistribution

The licence shall not restrict any party from selling or giving away the software as a component of an aggregate software distribution containing programs from several different sources. The licence shall not require a royalty or other fee for such sale.

The part about aggregate software was added to fix a loophole in the Artistic Licence, which was originally designed for Perl. Since almost all the programs that use that licence are also available under the GPL now, including Perl, that provision may be removed from future versions of the definition.

2.2.2 Source Code

The program must include source code, and must allow distribution in source code as well as compiled form. Where some form of a product is not distributed with source code, there must be a well-publicized means of obtaining the source code for no more than a reasonable reproduction cost preferably, downloading via the Internet without charge. The source code must be the preferred form in which a programmer would modify the program. Deliberately obfuscated source code is not allowed. Intermediate forms such as the output of a preprocessor or translator are not allowed.

2.2.3 Derived Works

The licence must allow modifications and derived works, and must allow them to be distributed under the same terms as the licence of the original software.

The intent here is for modification of any sort to be allowed. It must be allowed for a modified work to be distributed under the same licence terms as the original work. However, it is not required that any producer of a derived work must use the same licence terms, only that the option to do so be open to them. Various licences speak differently on this subject--the BSD licence allows you to take modifications private, while the GPL does not.

2.2.4 Integrity of The Author's Source Code

The licence may restrict source-code from being distributed in modified form only if the licence allows the distribution of "patch files" with the source code for the purpose of modifying the program at build time. The licence must explicitly permit distribution of software built from modified source code. The licence may require derived works to carry a different name or version number from the original software.

This gives authors a way to enforce a separation between their own work and modifications without prohibiting modifications.

The part about naming and versioning means that Netscape, for instance, can insist that only they can name a version of a programme Netscape Navigator™ while all free versions must be called Mozilla or something else.

2.2.5 No Discrimination Against Persons or Groups

The licence must not discriminate against any person or group of persons.

2.2.6 No Discrimination Against Fields of Endeavor

The licence must not restrict anyone from making use of the program in a specific field of endeavor. For example, it may not restrict the program from being used in a business, or from being used for genetic research.

2.2.7 Distribution of Licence

The rights attached to the program must apply to all to whom the program is redistributed without the need for execution of an additional licence by those parties.

This means that the licence must be automatic, with no signature required.

2.2.8 Licence Must Not Be Specific to a Product

The rights attached to the program must not depend on the program's being part of a particular software distribution. If the program is extracted from that distribution and used or distributed within the terms of the program's licence, all parties to whom the program is redistributed should have the same rights as those that are granted in conjunction with the original software distribution.

2.2.9 Licence Must Not Restrict Other Software

The licence must not place restrictions on other software that is distributed along with the licenced software. For example, the licence must not insist that all other programs distributed on the same medium must be open-source software.

Note that there is a difference between derivation and aggregation. Derivation is when a program actually incorporates part of another program into itself. Aggregation is when you include two programs on the same CD-ROM. This section of the Open Source Definition is concerned with aggregation, not derivation. Section 2.2.4 is concerned with derivation.

Notice also that, in previous versions of the definition, this section was titled: Licences Must Not Contaminate Other Software.

2.2.10 Licence Must Be Technology-Neutral

No provision of the licence may be predicated on any individual technology or style of interface.

<\OSIdefinition>

(The remainder section is mostly excerpted from [2])

This definition clearly leaves room for a wide variety of licences, and we will examine a number of those licence types shortly. Although it is this OSI definition of Open Source to which the remainder of this paper relates, it is worthwhile to also examine the definition of Free Software, for often times the terms Free Software and Open Source are used interchangeably. While they are similar, there are differences worth appreciating.

When we speak of Free Software, we are not talking about freeware, i.e., software that is essentially in the public domain. Rather, we are talking about software that is licenced under the precepts of the Free Software Foundation (FSF). Here is the FSF definition (from :

<FSFdefinition>

“Free software” is a matter of liberty, not price. To understand the concept, you should think of “free” as in “free speech”, not as in “free beer”.

Free software is a matter of the users' freedom to run, copy, distribute, study, change and improve the software. More precisely, it refers to four kinds of freedom, for the users of the software:

1. The freedom to run the program, for any purpose (freedom 0).
2. The freedom to study how the program works, and adapt it to your needs (freedom 1). Access to the source code is a precondition for this.
3. The freedom to redistribute copies so you can help your neighbour (freedom 2).
4. The freedom to improve the program, and release your improvements to the public, so that the whole community benefits (freedom 3). Access to the source code is a precondition for this.

A program is free software if users have all of these freedoms.

<\FSFdefinition>

Contrasting the Open Source and Free Software definitions, one finds that all Free Software is Open Source, but as administered by the Free Software Foundation, not all Open Source is Free Software. The difference principally arises from so-called licence compatibility, but in large measure the differences are principally philosophical and not substantial.

One such issue is the FSF insistence on so-called “copyleft” licences: a copyleft licence is a licence that guarantees that the software will remain free, even in modified versions. The OSI definition allows copyleft restrictions (e.g. section 2.2.3), but does not mandate them, nor does it particularly recommend them. The FSF definition does not require copyleft either, but the FSF flagship licence, the GNU General Public Licence (GPL) is a strong copyleft licence, and FSF insist that it should be preferred in all circumstances.

A list of licences that satisfy the Open Source definition can be found at [4]. A list of licences that satisfy the more restrictive FSF definition (thus a sublist of the previous) can be found at [6].

For a better appreciation of these definitions, it is interesting to refer to copyright law, in which open source software is fundamentally grounded. Under U.S. law, the right granted to the holder of a copyright are:

1. The exclusive right to copy the work;
2. The exclusive right to make derivative works;
3. The exclusive right to distribute the work;
4. The exclusive right to perform the work; and
5. The exclusive right to display the work.

These rights, in turn, are subject to certain limitations, such as rights of "fair use." Fair use includes the use of a work for purposes of criticism, comment, news reporting, teaching, scholarship or research and does not constitute infringement of the work.

3 OPEN SOURCE LICENCES

3.1 Types of open source licencing schemes

(With the exception of a few additional comments, this section is excerpted from [2].)

Open source licences may be broadly categorized into the following types: (1) those that apply no restrictions on the distribution of derivative works (we will call these Non-Protective Licences because they do not protect the code from being used in non-Open Source applications); and (2) those that do apply such restrictions (we will call these Protective Licences because they ensure that the code will always remain open/free).

To better appreciate the nature of these licences, it is helpful to picture software licences on a continuum based on the rights in copyright extended to the licensee. Software that has been placed in the public domain is free of all restrictions, all rights under copyright having been granted to the public at large. Licensors of Non-Protective Open Source licences retain their copyright, but they grant all rights under copyright to the licensee. Licensors of Protective Open Source licences retain their copyright, grant all rights under copyright to the licensee, but apply at least one restriction, typically that the redistribution of the software, whether modified or unmodified, must be under the same licence (i.e. strong copyleft). Licensors of propriety licences retain their copyright and only grant a few rights under copyright, typically only the rights to perform and display. The following table displays these contrast:

Right granted	Public domain	Non-protective (e.g. X)	Protective (e.g. GPL)	Proprietary (e.g. MS Windows)
Copyright retained	No	Yes	Yes	Yes
Right to perform	Yes	Yes	Yes	Yes
Right to display	Yes	Yes	Yes	Yes
Right to copy	Yes	Yes	Yes	No
Right to modify	Yes	Yes	Yes	No
Right to distribute	Yes	Yes	Yes, under same licence	No

Non-Protective Open Source licences include: Academic Free Licence v.1.2; Apache Software Licence v.1.1; Artistic; Attribution Assurance licence; BSD Licence; Eiffel Forum Licence; Intel Open Source Licence for CDSA/CSSM Implementation; MIT Licence; Open Group Test Suite Licence; Q Public Licence v.1.0; Sleepycat Licence;

Sun Industry Standards Source Licence; University of Illinois/NCSA Open Source Licence; Vovida Software Licence v.1.0; W3C Software Notice and Licence; X.Net, Inc. Licence; zlib/libpng Licence; and Zope Public Licence v.2.0.

Protective Open Source licences include: Apple Public Source Licence v.1.2; Artistic Licence; Common Public Licence v.1.0; GNU General Public Licence v.2.0; GNU Lesser General Public Licence v.2.1; IBM Public Licence v.1.0; Jabber Open Source Licence v.1.0; MITRE Collaborative Virtual Workspace Licence; Motosoto Open Source Licence v.0.9.1; Mozilla Public Licence v.1.0 and v.1.1; Nethack General Public Licence; Noika Open Source Licence v.1.0a; OCLC Research Public Licence v.1.0; Open Software Licence v.1.1; Python Licence; Python Software Foundation Licence v.2.1.1; Ricoh Source Code Public Licence v.1.0; and Sun Public Licence v.1.0.

All of these, and additional new licences, can be found on the Open Source Initiative website.

Some Open Source licences of both types include other provisions, such as restrictions on the use of trademarks, express grants of licence with respect to applicable patents, disclaimers of warranties, indemnification of copyright holders in commercial distributions, and disclaimers of liability. However, none of these provisions are as fundamentally important as the obligations/restrictions that are imposed on redistribution rights under the Protective Open Source licences, and it is with those restrictions on redistribution that we next focus.

3.2 Analysis of common open source licences

The previous section dealt with the rights granted to the licensee by the copyright holder. In this section, we describe some of the most common and significant open source licences, stressing the rights that the copyright holder keeps for himself and the obligations he puts on the licensee.

The remainder of this section is mostly excerpted from [1].

3.2.1 About free Software Licences in General

It is important to note that an author does not have to issue a program with just one licence. You can GPL a program, and also sell a version of the same program with a commercial, non-Open-Source licence. This exact strategy is used by many people who want to make a program Open Source and still make some money from it. Those who do not want an Open Source licence may pay for the privilege, providing a revenue stream for the author. That strategy can also be used by people who want to make sure that their version of the software remains free, and who thus want to use a protective licence, and who want to allow for less restrictive usage at the same time. Those people who do not want to be bound by the protective licence will use the other version instead.

All of the licences we will examine have a common feature: they each disclaim all warranties. The intent is to protect the software owner from any liability connected with the program. Since the program is often being given away at no cost, this is a reasonable requirement--the author doesn't have a sufficient revenue stream from the program to fund liability insurance and legal fees.

3.2.2 The GNU General Public Licence

The GPL is a political manifesto as well as a software licence, and much of its text is concerned with explaining the rationale behind the licence. This political dialogue has put some people off, and thus provided some of the reason that people have written other free software licences. However, the GPL was assembled with the assistance of law professors, and is much better written than most of its ilk.

The text of the GPL is not itself under the GPL. Its licence is simple: *Everyone is permitted to copy and distribute verbatim copies of this licence document, but changing it is not allowed.* An important point here is that the text of the licences of Open Source software are generally *not* themselves Open Source. Obviously, a licence would offer no protection if anyone could change it.

The provisions of the GPL satisfy the Open Source Definition. The GPL does not require any of the provisions permitted by paragraph 4 of the Open Source Definition, *Integrity of the Author's Source Code*.

The GPL does not allow you to *take modifications private*. Your modifications must be distributed under the GPL. Thus, the author of a GPL-ed program is likely to receive improvements from others, including commercial companies who modify his software for their own purposes.

The GPL does not allow the incorporation of a GPL-ed program into a proprietary program. The GPL's definition of a proprietary program is any program with a licence that does not give you as many rights as the GPL: this is the so-called “viral” feature. See [6] for a list of licences that are compatible with the GPL.

There are a few loopholes in the GPL that allow it to be used in programs that are not entirely Open Source. Software libraries that are normally distributed with the compiler or operating system you are using may be linked with GPL-ed software; the result is a partially-free program. The copyright holder (generally the author of the program) is the person who places the GPL on the program and has the right to violate his own licence. However, this right does not extend to any third parties who redistribute the program – they must follow all of the terms of the licence, even the ones that the copyright holder violates, and thus it is problematical to redistribute a GPL-ed program containing software distributed under an incompatible licence.

The political rhetoric in the GPL puts some people off. Some of them have chosen a less appropriate licence for their software simply because they eschew Richard Stallman's ideas and don't want to see them repeated in their own software packages.

The GPL is the epitome of the viral and protective licence.

3.2.3 The GNU Lesser (aka Library) General Public Licence

The LGPL is a derivative of the GPL that was designed for software libraries. Unlike the GPL, a LGPL-ed program can be incorporated into a proprietary program. The C-language library provided with Linux systems is an example of LGPL-ed software – it can be used to build proprietary programs, otherwise Linux would only be useful for free software authors.

An instance of an LGPL-ed program can be converted into a GPL-ed one at any time. Once that happens, you can't convert that instance, or anything derived from it, back into an LGPL-ed program.

The rest of the provisions of the LGPL are similar to those in the GPL--in fact, it includes the GPL by reference.

3.2.4 The X, BSD, and Apache Licences

The X licence and its relatives the BSD and Apache licences are very different from the GPL and LGPL. These licences let you do nearly anything with the software licenced under them. This is because the software that the X and BSD licences originally covered, was funded by monetary grants of the U.S. Government. Since the U.S. citizens had already paid for the software with their taxes, they were granted permission to make use of that software as they pleased¹.

The most important permission, and one missing from the GPL, is that you can take X-licenced modifications private. In other words, you can get the source code for a X-licenced program, modify it, and then sell binary versions of the program without distributing the source code of your modifications, and without applying the X licence to those modifications. This is still Open Source, however, as the Open Source Definition does not require that modifications always carry the original licence.

The X licence is the epitome of the non-viral, non-protective licence.

The *BSD (Berkeley System Distribution)* and the *Apache* web server project licences are variants of the X licence. An annoying feature of the BSD licence is a provision that requires you to mention (generally in a footnote) that the software was developed at the University of California any time you mention a feature of a BSD-licenced program in advertising. Keeping track of which software is BSD-licenced in something huge like a Linux distribution, and then remembering to mention the University whenever any of those programs are mentioned in advertising, is somewhat of a headache for business people. However, the *X Consortium* licence does not have that advertising provision. There is also a modified version of the BSD licence that does not carry the advertising provision.

3.2.5 The Artistic Licence

Although this licence was originally developed for Perl, it has since been used for other software. It is often considered a sloppily-worded licence, in that it makes requirements and then gives you loopholes that make it easy to bypass the requirements. Perhaps that is why almost all Artistic-licence software is now dual-licenced, offering the choice of the Artistic Licence or the GPL.

Section 5 of the Artistic Licence prohibits sale of the software, yet allows an aggregate software distribution of more than one program to be sold. So, if you bundle an Artistic-licenced program with a five-line *hello-world.c*, you can sell the bundle. This feature of the Artistic Licence was the sole cause of the "aggregate" loophole in paragraph 1 of the Open Source Definition (see 2.2.1). As use of the Artistic Licence wanes, the OSI is considering removing the loophole. That would make the *Artistic* a non-Open-Source licence.

The Artistic Licence requires you to make modifications free, but then gives you a loophole (in Section 7) that allows you to take modifications private or even place parts

¹ That non-U.S. citizen were incidentally granted the same rights came probably from the designers of the licences not being aware that there were computers in other parts of the world as well – even at the time!

of the Artistic-licensed program in the public domain (that is, to dispose of the author's copyright at your will)!

3.2.6 The Netscape Public Licence and the Mozilla Public Licence

NPL was developed by Netscape when they made their product *Netscape Navigator* Open Source. Actually, the Open-Source version is called *Mozilla*; Netscape reserves the trademark *Navigator* for their own product.

An important feature of the NPL is that it contains special privileges that apply to Netscape and nobody else. It gives Netscape the privilege of re-licensing modifications that you've made to their software. They can take those modifications private, improve them, and refuse to give you the result. This provision was necessary because when Netscape decided to go Open Source, it had contracts with other companies that committed it to provide *Navigator* to them under a non-Open-Source licence.

Netscape created the *MPL*, or *Mozilla* Public Licence, to address this concern. The MPL is much like the NPL, but does not contain the clause that allows Netscape to re-licence your modifications.

The NPL and MPL allow you to take modifications private.

Many companies have adopted a variation of the MPL for their own programs. This is unfortunate, because the NPL was designed for the specific business situation that Netscape was in at the time it was written, and is not necessarily appropriate for others to use. It should remain the licence of Netscape and Mozilla, and others should use the GPL or LGPL or the X licence.

3.3 Comparison of common open source licences

Licence	Forbid mixing with non-free software	Forbid modifications being taken private and not returned to you	Forbid or restrict relicensing by anyone	Contains special privileges for the original copyright holder over your modifications
GPL	Yes	Yes	Yes	No
LGPL	No	Yes	Yes	No
X, BSD, Apache	No	No	Yes	No
NPL	No	No	Yes	Yes (MPL: No)
Public Domain	No	No	No	No

4 DISCUSSION

4.1 Licences used for WS and related standards

4.1.1 W3C

W3C Software Notice and Licence [7] complies with OSI and FSF definitions – that is, it is an open source as well as a free software licence. It is non-copyleft and non-protective (in the sense of section 3.1). It applies to any software (including documentation) published on the W3C site. Public documents on W3C site, including recommendations, are published under the W3C document licence [8]. Notice that this applies to the WSMO submission.

The W3C also implements a patent policy [9] with the goal to assure that Recommendations produced under this policy can be implemented on a Royalty-Free (RF) basis. Subject to the conditions of this policy, W3C will not approve a Recommendation if it is aware that Essential Claims exist which are not available on Royalty-Free terms. As a consequence, each participant (W3C Members, W3C Team members, invited experts, and members of the public) shall agree, as a condition of participating in a Working Group, to make available under W3C RF licensing requirements any Essential Claims related to the work of that particular Working Group. This requirement includes Essential Claims that the participant owns and any that the participant has the right to licence without obligation of payment or other consideration to an unrelated third party.

Regarding member submissions (such as WSMO), all Submitters and any others who provide patent licences associated with the submitted document must indicate, at the time the submission is made, whether or not each entity (Submitters and other licensors) will offer a licence according to the W3C RF licensing requirements for any portion of the Submission that is subsequently incorporated in a W3C Recommendation. The W3C Team may acknowledge the Submission if the answer to the licensing commitment is either affirmative or negative, and shall not acknowledge the Submission if no response is provided. Notice that the submitters of WSMO agreed to offer licences according to the W3C Royalty-Free licensing requirements.

4.1.2 OASIS

Any document produced by an OASIS Technical Committee shall include the following notices (excerpted from [10]):

This document and translations of it may be copied and furnished to others, and derivative works that comment on or otherwise explain it or assist in its implementation may be prepared, copied, published, and distributed, in whole or in part, without restriction of any kind, provided that the above copyright notice and this section are included on all such copies and derivative works. [...] The limited permissions granted above are perpetual and will not be revoked by OASIS or its successors or assigns.

In other words, OASIS specifications are under an open, free, copyleft, protective licence. Notice that this includes the ebXML specifications.

However, OASIS does not have a royalty-free policy on patents like W3C does: it requires that patents encumbering OASIS specification be granted on either on (possibly qualified) royalty-free or reasonable and non-discriminatory (RAND) terms.

4.1.3 OMG

OMG does not have an explicit, clearcut licencing policy that applies to all OMG documents and specifications. OMG's Policies and Procedures document states that (excerpted from [11]):

Proprietary information shall not be disclosed by any participant during any meeting of any OMG Plenary Body or any subgroup.

[This section clearly places the onus of protection of proprietary rights on the owner of those rights. No discussion of proprietary technology can take place during a meeting of a plenary body or any subgroup, protecting the participants in the meeting from accidental exposure to proprietary information (and consequent future legal problems with that participant's own intellectual property rights). If an OMG member wishes to present information of a proprietary nature to members of an OMG Technical Plenary, he or she may arrange a meeting of the interested parties totally separate from the OMG process and meeting.]

This might be interpreted as meaning that proprietary information disclosed at OMG meetings becomes automatically public domain, especially since this interpretation is explicitly stated in another OMG document [12]. However, the Policies and Process otherwise states that:

Availability of technology may be ensured by the BOD by two routes: (1) guarantees in the form of contractual licensing agreement terms in an agreement between the sponsoring company and the OMG; or (2) transfer of the copyright to the specification to the OMG itself. The placing of the specification in the public domain by the sponsoring member was not deemed appropriate, as control would pass completely from the OMG membership.

And the OMG Hitchhiker's Guide states, in its description of the technology adoption process, that: *The Business Committee also ensures that sufficient rights are granted that allow the specification to be freely available and that derivative works may be undertaken* [12].

Furthermore, different OMG standards are released under different licences.

The bottom-line here is that OMG standards and technology must be released under a copyleft licence.

4.2 Acceptability for DIP partners

The acceptability of different open source licencing schemes varies according to different partners in DIP, as could be expected: partners producing mostly open source code, like NUIG, for instance, will tend to favour protective copyleft licences, such as the GPL, while commercial partners, who produce mostly proprietary software but who want to be able to embed DIP results, usually prefer non-protective licences because more protective licences are perceived to be viral.

Large commercial partners, like SAP, tend to be more restrictive, and accept only the most open (less protective) licences, like the X or Apache licences, while smaller partner, like ILOG, tend to be more flexible, and open to mid-way licences like the LGPL, at least when their customer do not object.

The position of Sirma, as presented below, is representative of the more flexible approach.

4.2.1 Ontotext Lab, Sirma

The section starts with an introduction on the understanding of Ontotext about the technology fields related to DIP, as well as on the best ways for distribution of software in these areas. This introduction provides the motivation behind Ontotext's preferences for licensing schemata.

Ontology Management and Semantic WS are not well-established research and technology areas. They are young and pretty dynamic; there is no considerable experience in successful exploitation. In such areas, it is very important for some basic pieces of software (components, tools, platforms, or environments) to gather mindshare in terms of awareness, interest, understanding, and trust. There is a proven approach for achieving the above goals – to allow a free and easy path for adoption of the software, which allows for unconstrained commercial development. Due to high risk of adoption of tools and the underlying approaches from new areas, it is crucial to allow the developers to experiment with the tools without the constraints of non-open or non-standard licensing agreements. Any artificial burden to the adoption of such technology is likely to prevent it from gaining critical mass. It is Ontotext's understanding that licences more restrictive than LGPL represent a serious threat to the acceptance of such software.

Still, different licences and access modalities are appropriate for different parts of software architecture, including the one of DIP. Ontotext's understanding is that this architecture should be a mixture between:

- Free software with copyleft protection, more precisely under LGPL, and
- Proprietary extensions (products, components, plug-ins, applications), which are available free of charge for research and evaluation purposes. The source code of such extensions should be typically not released.

The components, which should be available as free software, are of two sorts:

- The basic infrastructure, which is mandatory for a complete system to be developed. Such examples are APIs and datamodels, such as the WSMO API, part of wsmo4j (<http://wsmo4j.sourceforge.org>);
- Basic components, which allow for easy bootstrapping of an application, which covers the full lifecycle of the technology. Such example is WSMO Studio (<http://www.wsmostudio.org>), which allows for bootstrapping of service development environments, providing infrastructure and basic editing functionality.

Any components, which does not fit the above two categories should be proprietary, to allow for maximization of exploitable results. This includes: high-performance scalable versions, advanced functionality (such as reasoners, supporting expressive languages), components enabling enterprise-level manageability and reliability.

Ontotext accepts that software developed within the project can be made available to partners under conditions different from those offered to the general public, as this is specified in the consortium agreement. Still, this sort of licensing is applicable in forms and degrees which does not threaten the general acceptance of the software.

5 CONCLUSION

A first general recommendation is that DIP should use an existing licence for open software: writing our own open licence is not a step that we should take lightly, and we do not have strong reasons for taking it, as far as the authors of this report can see.

A second general recommendation is that we should keep be the main licences, that is GPL, LGPL and the X licence: most if not all other licences, either are derivative of these ones, and they were derived for a purpose that we do not know or do not share; or they were written for specific purposes that we either do not know or do not share; and/or their use is less widespread and thus they have been less tested and they will be less easily accepted by our partners.

Based on the observation that some partners in DIP support the use of a strongly protective licence like the GPL, while others object to its viral character, our recommendation is that DIP open software should be dually licenced; it should be released under whatever licence the copyright holder decides, including the GPL, for the general public, and, for the DIP partnership, under a licence no stronger than the LGPL, and preferably under the X licence.

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