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Intellectual property licensing tensions: in utilizing open source software in the formal standard setting context

The case of Apache version 2.0 in ETSI as a start

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<https://ieeexplore.ieee.org/document/8246986>.

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Summary:

Open Source Software (OSS) is increasingly active in shaping future standards such as 5G and the Internet of Things. Realizing this, formal standard development organizations (SDOs) are also exploring ways to utilize OSS. However, questions are often asked about how to address Intellectual Property Rights (IPRs) issues, such as compatibility issue between Fair, Reasonable and Non-Discriminatory (FRAND) licensing commitment on Standard Essential Patents (SEPs) and an open source license. Against this background, this paper endeavours to answer the following questions: “What are the differences between SDOs’ IPR policies and open source licenses in dealing with IPRs?” “What frictions may arise from such differences in their interactions?” “Whether the current IPRs framework of formal SDOs is adequate to embrace OSS?”.

We first introduce the differences between SDOs IPR policies and open source licenses in dealing with copyright and patent right (Part 2). These differences were compared between IPR rules represented from three selected SDOs, namely ITU, ETSI and IEEE, and features shown in the “nine most popular open source licenses” approved by the OSI.² We find that SDOs have structured and stable rules regarding patent and copyright. With respect to patent right, these three SDOs allow SEP holders to make a FRAND commitment, which enables patent owners and implementers to negotiate royalty rates and other conditions for SEPs. Copyright obtained less attention in SDOs so far. The three SDOs all hold the copyright ownership of their standards specifications. Distributions and modifications are restricted. Generally speaking, standards value the stability of a specification in order to facilitate interoperability among components, product, services and software. Free distribution and modification on specifications are often not allowed. On the other hand, open source licenses are basically copyright licenses on software code. Not all open sources are the same, but they share common features as required by the OSI Open Source Definition. A right owner gives away some of aspects of their exclusivity of the copyright, such as the right to use, to modify and to distribute for free if recipients agree to the open source license. Many open source licenses (6 of the nine most popular ones) also include a patent clause to grant patent right in a similar way. Overall, the essence of an open source license is to make source code available and to encourage redistribution and, especially with some licenses, contribution of improvements back to the original code project. It should be noted that

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² See <https://opensource.org/licenses/category>, Licenses that are “popular and widely-used or with strong communities” include: Apache License 2.0 (Apache-2.0), 3-clause BSD license (BSD-3-Clause), 2-clause BSD license (BSD-2-Clause), GNU General Public License (GPL), GNU Lesser General Public License (LGPL), MIT license (MIT), Mozilla Public License 2.0 (MPL-2.0), Common Development and Distribution License version 1.0 (CDDL-1.0) and Eclipse Public License version 2.0.

some features, such as “copyleft” or a “patent retaliation” clause, are not shared by all open source licenses. But they can be in the center of discussions on an open source license that have adopted some or one of them.

These differences could not only be compared in a vacuum; instead, in Part 3 we analyze them in scenarios where open source licenses meet SDOs IPRs policies. We look at two major scenarios, namely “implementing SDOs standards in OSS” and “Usage of OSS in developing SDOs standards”. Our preliminary analysis shows that FRAND does not necessarily conflict with most open source licenses (except GPL family licenses with a strong “copyleft” feature) when OSS implementing standards with SEPs under a FRAND Commitment, as the FRAND license should always prevail. This result is consistent with findings in previous research such as Kesan, Jay. argued in his paper "The Fallacy of OSS Discrimination by FRAND Licensing: An Empirical Analysis." (2011). However, in the second scenario (including the three sub-scenarios: “direct use of running code”, “code become essential part of a specification” and “functions derived from open source code”), uncertainties rise due to lack of specific rules, or unclear about which ownership or distribution right rule should prevail. We suggest SDOs to update the current software guidelines (if one has) or to adopt one. They would also benefit from having specific terms to clarify the different applications of the scope of FRAND and terms in an open source license to avoid confusion.

In Part 4, we introduce an Open Source Group (OSG) launched by the ETSI in 2016 to reflect on our arguments. The OSG is a project under the ETSI Secretariat's umbrella, as it does not fit into any of the groups in ETSI's Directives, and therefore will not produce any ETSI deliverables. The Terms of Reference of the OSG Open Source MANO (OSM)³ limits the usage of the project to only open source implementation for ETSI NFV standards, excluding particularly the direct use of open source code in specifications. It presents the ETSI's awareness to clarify the application scope of the Apache version 2.0 and to address some of the tensions we described in Part 3. However, we find that ETSI members might still have a reason for concerns when the project continues developing. Without a clear guidance on the priority of FRAND and Apache version 2.0, because of the royalty free patent granting and patent retaliation clause in Apache version 2.0, there is a chance for making patents embedded in standards free from royalty charges to a “Work” that is too large to be controlled. Also, ETSI members who have patents that might be captured by the Apache licensed code project will be unable to contribute code to such projects unless they forfeit some of their patent rights. These concerns may need further considerations, since it may discourage innovators to contribute thus diminishing one goal of ETSI to seek a balance between the needs of standardization for public use and the right of the owners of IPRs. Overall, the OSM is a pioneering step that other formal SDOs can learn some experience from. The power of code is likely to go up, what matters for SDOs is to realize the issue and conceive its own goal, then select an open source license and design an optimum IPR mode accordingly.

³ https://portal.etsi.org/Portals/0/TBpages/OSM/Docs/ETSI_OSG_OSM_ToR_2016-02-09.pdf