Intellectual property licensing tensions in incorporating open source into formal standard setting context – The case of Apache v.2 in the ETSI as a start

Jingze Li
Tilburg Institute of Law, Technology and Society (TILT), Tilburg University
Email: j.li_11@uvt.nl
Outline

• 1. Introduction
• 2. SSO and OSS
• 3. Perceived Tensions
• 4. Apache v.2 and the ETSI
1. Introduction – background

- Standard Setting Organizations (SSOs) explore the role of open source software (OSS) in standardization for future technologies, e.g. 5G, IoTs, cloud computing
  - ITU (2016, 2017); ANSI (2016); ETSI (2016)

- Intellectual property Rights (IPRs) in the interplay is not clear
  - Compatibility issues between FRAND licenses and open source licenses (OSLs) (Kesan, 2011; Mitchell QC & Mason, 2011; EC, 2014; Lundell, Gamalielsson & Katz, 2016, etc.)
  - Other uncertain issues regarding copyright and patent right (ETSI, 2005 & 2015; Lundell & Gamalielsson, 2017)
1. Introduction – Research question

• Whether the current IPRs framework of formal SSOs is adequate to embrace OSS?
  – Formal SSOs perspective, ITU, IEEE, ETSI
  – Nine popular OSLs identified by OSI, including: GPL, Apache v.2, MIT…

• Two major scenarios
  – Open source implementation based on existing standards
  – An SSO hosts an open source project in standardization process
2. SSO and OSS - Libraries and Bazaars?

- Krechmer (2002)
- Standards are vetted

Open source is a marketplace full of new ideas, the freedom to change and evolve.
2. SSO and OSS - different ways of dealing with IP

- **SSO:**
  - **Copyright:**
    a. Copyright of specifications maintained by the SSO;
    b. Embedded software is subject to software guidelines: ITU, ETSI

- **OSS:**
  - **Copyright:**
    a. Developers give away a bundle of exclusive rights under an OSL.
    b. RF copyright license subject to terms and conditions

Stability over distribution

Freedom to distribute is at the core
2. SSO and OSS - different ways of dealing with IP

- **SSO:**
  - *patent*
    a. Owned by patent owner (members);
    b. Implementers need to seek a license;
    c. License terms subject to FRAND (ITU, IEEE and ETSI), normally royalty bearing

- **OSS:**
  - *patent*
    a. Some have patent grant clause (6 of 9).
    b. RF patent license subject to terms and conditions
## 3. Perceived tensions

<table>
<thead>
<tr>
<th>Implementation (A)</th>
<th>Standardization activities (B)</th>
<th>Essential copyright (ii)</th>
<th>Patent built on code (iii)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SSO</strong></td>
<td>FRAND</td>
<td>Ownership of specifications</td>
<td>FRAND, compare with SPEs (ETSI)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distribution: Software guidelines (ITU, ETSI); Not specified (IEEE)</td>
<td>Not specified (ITU, IEEE)</td>
</tr>
<tr>
<td><strong>OSS</strong></td>
<td><strong>NA</strong></td>
<td>Contributors own the copyright</td>
<td>Contributors own the copyright</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Free distribution subject to OSLs</td>
<td>Free distribution subject to OSLs</td>
</tr>
<tr>
<td><strong>Gaps</strong></td>
<td>Incompatible with Strong copyleft</td>
<td>Incompatible</td>
<td>Lack of clarity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lack of clarity</td>
</tr>
</tbody>
</table>
3. Perceived tensions (A)

- Implementing SSOs standards in OSS
  - Previous research on patent issue: GPL family is not compatible with FRAND (Mitchell & Mason, 2010; Kesan, 2012) However, it is not the patent licensing in an OSLs (e.g. clause 3 in Apache v.2) makes it compatible, but the “strong copyleft” feature
  - Copyleft: a general method for making a program (or other work) free (in the sense of freedom, not “zero price”), and requiring all modified and extended versions of the program to be free as well.”
  - E.g. OpenBTS, OpenBSC, Open IMS Core (ETSI, 2015)
3. Perceived tensions (B)

- Usage of OSS in developing SSOs standards (i)
  
  - **Direct use of running code**
    a. Copyright ownership: who claim the copyright
    b. Distribution rules: software guidelines (ITU & ETSI) v. freedom to distribute (OSLs)
    c. Lack of specific rules: IEEE, should OSLs prevail?
3. Perceived tensions (B)

• Usage of OSS in developing SSOs standards (ii)

  – Code becomes essential
    a. Lack of specific rules:
    b. FRAND commitment cover essential copyright? Or OSLs prevail?

   “…patents and copyrights are sufficiently different that using the same language do address both types of IPRs provides a less than ideal result…” (Bekkers & Updegrove, 2012)
3. Perceived tensions (B)

- Usage of OSS in developing SSOs standards (iii)
  - Functions derived from open source code
    a. RF or FRAND?
    b. Different from OSS implementation

Since the standard is connected with a hosting open source projects
## 3. Perceived tensions

<table>
<thead>
<tr>
<th>Implementation (A)</th>
<th>Standardization activities (B) Direct use of code (i)</th>
<th>Essential copyright (ii)</th>
<th>Patent built on code (iii)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SSO</strong></td>
<td>Ownership of specifications</td>
<td>FRAND, compare with SPEs (ETSI)</td>
<td>FRAND on SEPs*</td>
</tr>
<tr>
<td></td>
<td>Distribution: Software guidelines (ITU, ETSI); Not specified (IEEE)</td>
<td>Not specified (ITU, IEEE)</td>
<td></td>
</tr>
<tr>
<td><strong>OSS</strong></td>
<td>Contributors own the copyright</td>
<td>Contributors own the copyright</td>
<td>RF Patent clause (GPL v.3, ...)</td>
</tr>
<tr>
<td></td>
<td>Free distribution subject to OSLs</td>
<td>Free distribution subject to OSLs</td>
<td><em>NA</em> (MIT…)</td>
</tr>
<tr>
<td><strong>Gaps</strong></td>
<td>Incompatible with Strong copyleft</td>
<td>Incompatible copyright policy</td>
<td>Lack of clarity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. Apache v.2 and the ETSI

• In April 2016, the ETSI launched an open source project “OSM” under the Apache v.2 license, which is aligned with ETSI (NFV).

• ETSI IPR rules:
  – Article 6: FRAND
  – Article 9: software guidelines

• Apache v.2:
  – No “copyleft”
  – Patent retaliation
4. Apache v.2 and the ETSI

- ETSI issued OSM Terms of Reference (ToR):
  - Defining the application scope of ETSI IPR rules and Apache v.2
4. Apache v.2 and the ETSI

- Limited to implementation
  - “…[n]either the CR’s nor the OSG OSM Reports will contain code for direct inclusion into an ISG NFV Group Specification”. (ToR)
  - FRAND applies to SEPs, Apache v.2 applies to OSM
  - No tension

- Potential standardization activities
  - “provide practical and essential feedback to …three specifications.” (ToR) – compare with RDFa and Drupal
  - No direct use of code, but functions may derive from OSM – scenario B(iii)
  - Patent retaliation clause poses risks (32 out of 800 members participated)
Findings and discussions

• Gaps exist in the current IPRs framework of ITU, ETSI and IEEE, that poses uncertainties in utilizing OSS
• Software guidelines need to be updated in accordance with the goals of a specific SSO of to what extent it would like to embrace OSS
• ETSI OSM sets a good example practice, by issuing additional documents to limit the usage of OSS, however:
  - Risks still exist for patent holder members that impede their full participation
  - While on the other hand, open source developers may not be fully encouraged
• Future work for formal SSOs to explore, may be learn from OASIS, W3C and IETF…
Thank you

Jingze Li
TILT, Tilburg University
j.li_11@uvt.nl