

**DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS  
COMPETITION COMMITTEE**

**INTELLECTUAL PROPERTY AND STANDARD SETTING**

**-- Note by Antoine Dore, International Telecommunication Union --**

**17-18 December 2014**

*This paper by Antoine Dore (Senior Legal Officer, Legal Affairs Unit, International Telecommunication Union) was submitted as background material for Item VII of the 122nd meeting of the OECD Competition Committee on 17-18 December 2014.*

*The opinions expressed and arguments employed herein do not necessarily reflect the official views of the Organisation or of the governments of its member countries.*

*More documents related to this discussion can be found at <http://www.oecd.org/daf/competition>.*

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**PRIVATE PROPERTY IN THE PUBLIC INTEREST:  
THE INTERPLAY OF PATENTS AND STANDARDS**

*Note by Antoine Dore<sup>1</sup>*

**1. ITU's standards development activities**

1. The International Telecommunication Union (ITU) has a long history, being a direct descendent of the International Telegraph Convention of 1865 and thus one of the world's oldest intergovernmental organisations. Although the International Radio Telegraph Convention was established separately in 1906, the two conventions were merged in 1932 and the resulting organisation was subsequently renamed the International Telecommunication Union in 1934.

2. Standards development has been one of ITU's core activities since its inception, but the organisation differs from other standards bodies in one key respect, namely in that it is an intergovernmental organisation founded on a treaty between nation states.

3. ITU has a public-private partnership of members that includes 193 Member States and over 700 private-sector entities, as well as academia and research institutes. It has a federated structure in which a General Secretariat supports membership-driven work undertaken in three specialised Sectors, each of which is also supported by its own secretariat. The Radiocommunication Sector (ITU-R) allocates global radio spectrum and satellite orbits, among other things; the Telecommunication Standardization Sector (ITU-T) develops the technical standards that ensure networks and technologies seamlessly interconnect; and the Telecommunication Development Sector (ITU-D) strives to improve access to ICTs for underserved communities worldwide.

4. ITU-T is responsible for the majority of ITU's standards work, although standards are also developed by ITU-R. This paper focuses on the ITU-T standardisation process and its resulting global standards (ITU-T Recommendations).

5. ITU-T Recommendations cover a wide range of ICT fields, but some of the best known are those underpinning copper- or fibre-based access networks (such as ADSL), long-haul optical transport and audio-visual coding.

6. Modern communications services, and associated devices and equipment, seldom rely on one single standard to satisfy end users' needs. They often depend on dozens if not hundreds of different standards, some of which address very specific technical aspects while others specify broader solutions or systems. These standards often originate from a wide array of standards-setting entities. Take for example your smartphone. ITU's standardisation arm (ITU-T) develops the 'codecs' that provide voice and video, also enabling mobile backhaul with optical transport standards. ITU's radiocommunication arm (ITU-R) manages the radio-frequency spectrum in which it operates. The Third Generation Partnership Project (3GPP) develops standards for the radiocommunications between smartphone and network. The Institute of

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Electrical and Electronics Engineers (IEEE) develops 'Wi-Fi' standards. The Internet Engineering Task Force (IETF) maintains the Internet Protocol suite (TCP/IP) and Hypertext Transfer Protocol (HTTP). The World Wide Web Consortium (W3C) is responsible for Hypertext Markup Language (HTML) and Extensible Markup Language (XML), and this is just a sample of the many standards bodies and standards involved.

7. ITU-T study groups are groups of experts volunteered by members to develop standards in a particular technical field. Central to the ITU-T standardisation process is the concept of a 'contribution', the term used to describe a membership input to an ITU-T study group. The subject matter of contributions varies, but typically they are limited to suggesting new work areas, new Recommendations and changes to existing ITU-T Recommendations. The acceptance of a proposal in a contribution is dependent on that proposal finding consensus among a study group's participants.

8. Assisting in the organisation of standardisation work, a study group may be structured into a number of 'working parties' overseeing particular groups of 'questions'. Standardisation work on a question is carried out by a 'rapporteur group', a team of experts tasked with drafting ITU-T Recommendations to meet a question's agreed objectives, taking into account guidance from other study group participants as well as from other relevant ITU expert groups.

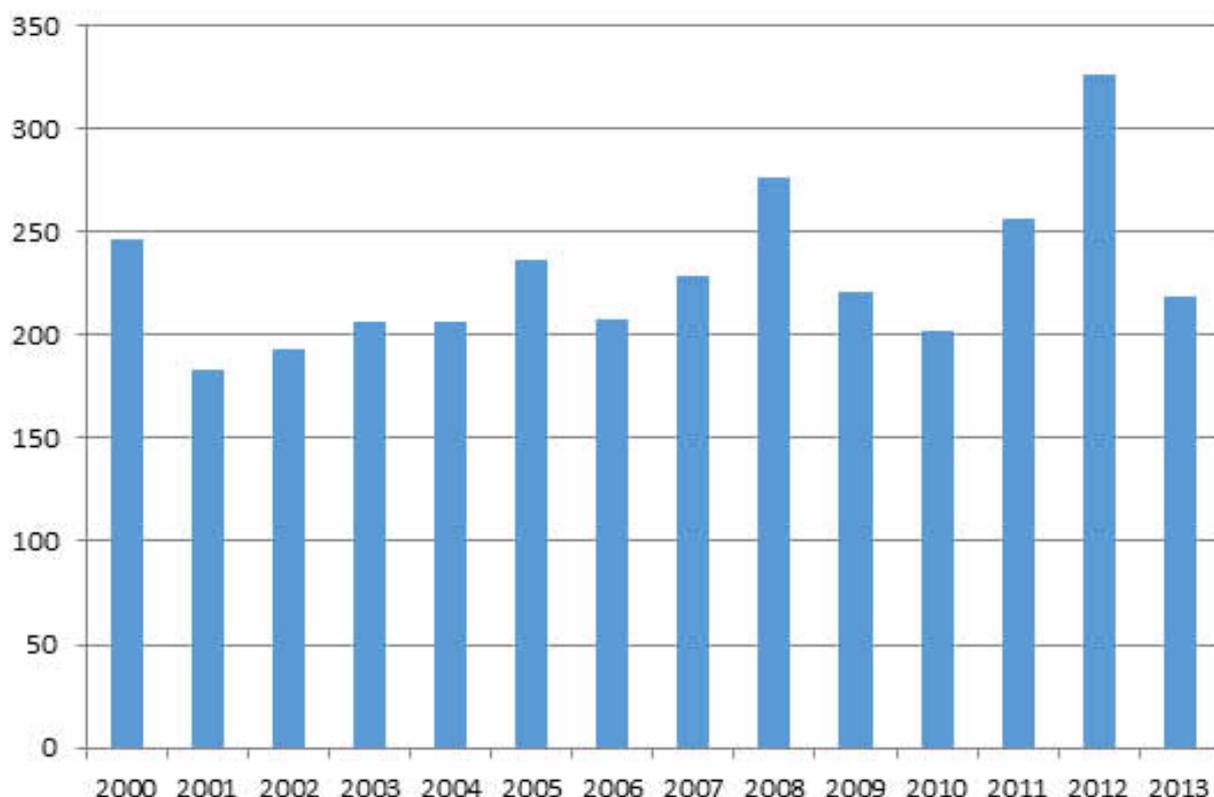
9. Once the text of a draft ITU-T Recommendation is considered mature, it is submitted for review to a meeting of the overarching study group or working party. If agreed by the meeting, it is given 'consent' – meaning that the study group or working party has given its consent that the text is sufficiently mature to initiate a final review process leading to the approval of the ITU-T Recommendation. After a text has achieved consent (or is 'determined' in the case of standards that have regulatory implications), the Director of ITU-T's secretariat, the Telecommunication Standardization Bureau (TSB), announces the start of the applicable approval process (either TAP or AAP, as described below) by posting the draft text on the ITU-T website and calling for comments. This gives all members the opportunity to review the text.

10. Draft ITU-T Recommendations that have regulatory implications are subjected to an approval process termed the 'traditional approval process' (TAP). TAP contains a number of safeguards deemed necessary in the context of these regulatory implications, and, as a result, this process takes some time. However, the vast majority of ITU-T Recommendations are approved via the 'alternative approval process' (AAP), a fast-track approval procedure developed in the interests of delivering standards to market in the time-frame demanded by the ICT industry.

11. In both TAP and AAP, the 'last call' phase is a four-week period in which comments can be submitted by Member States and Sector Members. If no comments other than editorial corrections are received, the ITU-T Recommendation is considered approved.

12. Over the last decade, ITU approved between 183 and 326 new or revised ITU-T Recommendations each year, as illustrated below:

Figure 1. New and revised ITU-T Recommendations approved, 2000-2012



13. Generally speaking, competition authorities support standardisation, repeating in a large number of cases that standardisation provides significant stimulus to innovation, substantial efficiency gains and benefits to consumers, by underpinning the interoperability and compatibility of different manufacturers' products, reducing transaction costs and encouraging the achievement of economies of scale.

14. Agreements among market participants that lead to the creation of new standards, though not exempt from scrutiny within the bounds of competition law, do not normally raise any concerns in relation to anti-competitive behaviour. Despite the many acknowledged benefits of standardisation, standards might in some circumstances, depending on their scope and the intentions of participants in standards development, give rise to restrictive effects on competition by potentially restricting price competition or controlling production and markets (see below section on standard-essential patents).

## 2. ITU's patent policy and related guidelines

15. Almost all SDOs have established policies governing the inclusion of patented technology in standards.

16. ITU began discussing the issues associated with the inclusion of patented technology in its standards in the early 1970s, but as technology and business strategies evolved, the number of standard-essential patents (SEPs)<sup>2</sup> and their importance has grown in significance. The first version of an ITU patent

<sup>2</sup> Standard-essential patents (SEPs) are patents that must be licensed in order to implement a given technical standard. Unlike non-SEPs, by definition it is not possible to work around a SEP and still implement the standard.

policy was developed in 1985, based largely on best practices established by certain ITU-T study groups. Later, during the 1990s, it became apparent that the issues surrounding patents and standards were arising more frequently and becoming even more complex. In response, the TSB Director's Ad Hoc Group on IPR<sup>3</sup> was established as a forum for experts from the ITU membership and invited guests to provide input and guidance on these issues.

17. Two other large, global SDOs – ISO and IEC – found themselves in a similar position and were also evaluating their IPR policies. Against the backdrop of increasing ICT convergence, the three organisations saw benefits to harmonising their IPR policies and orchestrated this harmonisation through their World Standards Cooperation (WSC) initiative. After considerable discussion, WSC announced in March 2007 that it had agreed a Common Patent Policy for ITU/ISO/IEC.

18. The ITU/ISO/IEC Common Patent Policy allows for companies' innovative technologies to be included in standards as long as intellectual property is made available to all standards implementers on reasonable and non-discriminatory (RAND)<sup>4</sup> terms and conditions.

19. The overriding objective of the ITU patent policy is 'that a patent embodied fully or partly in a Recommendation/deliverable must be accessible to everybody without undue constraints'.

20. IPR policies are usually either participation or commitment-based. ITU's policy, much like those of other large SDOs, is commitment-based. The policy encourages the early disclosure and identification of patents that might be essential to standards under development. As part of that disclosure, SEP holders are asked to provide a statement regarding their willingness to license their SEPs to standards implementers. The policy thus seeks to improve the efficiency of ITU standards development and avoid conflict stemming from patent-rights disputes.

21. The harmonised ITU/ISO/IEC approach to the treatment of patents comprises:

1. Common Patent Policy for ITU-T/ITU-R/ISO/IEC<sup>5</sup>;
2. Guidelines for Implementation of the Common Patent Policy for ITU-T/ITU-R/ISO/IEC<sup>6</sup>. These guidelines are intended to clarify and facilitate implementation of the Patent Policy; and
3. Patent Statement and Licensing Declaration Form<sup>7</sup>.

22. While the Patent Policy has remained unchanged since its adoption in 2007, the Guidelines and various declaration forms have been updated over time. [www.itu.int/en/ITU-T/ipr/Pages/policy.aspx](http://www.itu.int/en/ITU-T/ipr/Pages/policy.aspx)

23. The Patent Policy, in keeping with most commitment-based IPR policies, has two main building blocks: disclosure rules, and licensing commitments. Disclosure refers to standardisation participants' alerting ITU of the existence of any patents or pending patent applications that might lead to a standard incorporating SEPs once approved. Licensing commitments are made in response to the request that SEP holders provide ITU with a declaration of their willingness to license SEPs to all standards implementers

<sup>3</sup> <http://www.itu.int/en/ITU-T/ipr/Pages/adhoc.aspx>

<sup>4</sup> The RAND abbreviation is used predominantly in the United States, while the term FRAND is used more commonly in Europe. This seems to be a matter of convention, though, and does not reflect any difference in meaning or intent.

<sup>5</sup> <http://www.itu.int/en/ITU-T/ipr/Pages/policy.aspx>

<sup>6</sup> <http://www.itu.int/oth/T0404000001/en>

<sup>7</sup> <http://www.itu.int/oth/T0404000002/en>

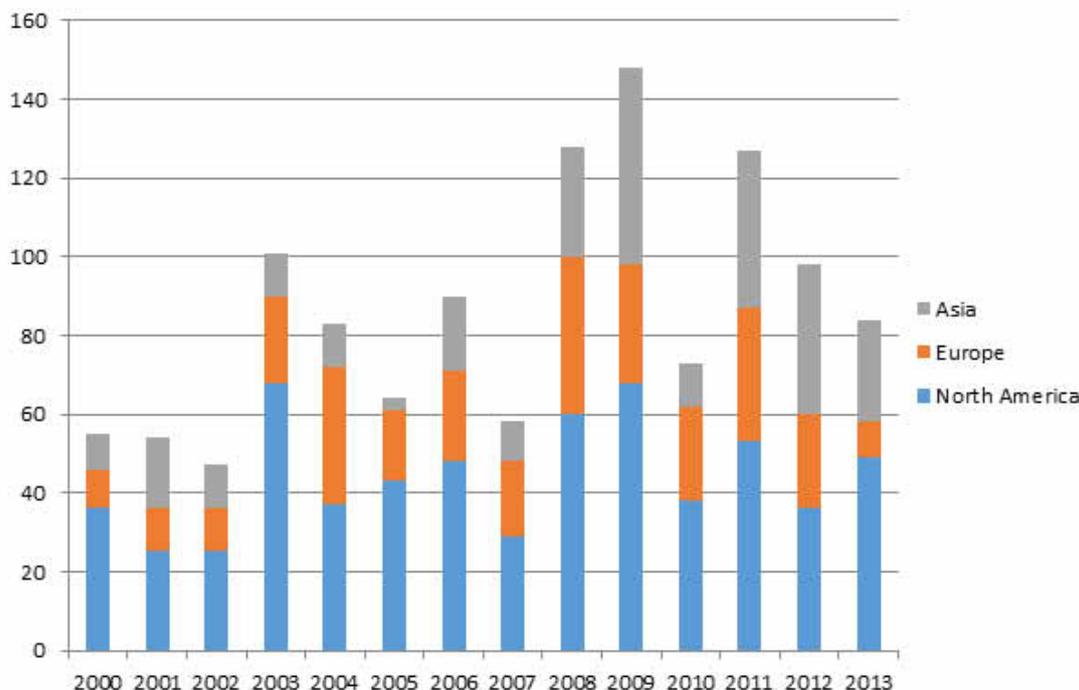
on RAND or royalty-free terms. Such disclosures and licensing commitments are affected through ITU’s Patent Statement and Licensing Declaration Form.

24. The general disclosure rule in the Patent Policy reads: ‘Any party participating in the work of ITU, ISO or IEC should, from the outset, draw the attention of the Director of ITU-TSB, the Director of ITU-BR, or the offices of the CEOs of ISO or IEC, respectively, to any known patent or to any known pending patent application, either their own or of other organisations’. The Guidelines further explain that information should be provided ‘in good faith and on a best-effort basis’ but there is no requirement that participating patent holders conduct patent searches in order to make more definitive disclosures.

25. As disclosure is encouraged early in the standards-development process, before the text of a standard matures, it is very possible that disclosed patents will not be essential to the final version of a standard. This uncertainty is magnified by the possibility that disclosed patent applications will have their scope narrowed during the patent prosecution process, resulting in the granted patent not being essential to the standard. There is also the risk that the final version of a standard will differ substantially from earlier versions, thereby covering patents or pending patent applications not initially considered relevant to a standard under development. These limitations are the result of a trade-off made by the Patent Policy: to seek disclosures late in the standards-development process might result in higher ‘quality’ disclosures, insofar as there will be a higher likelihood of disclosed patents actually being standard-essential; however, at this stage, undesirable consequences can result from the discovery that patented technology is not available on the sought RAND or royalty-free terms.

26. ITU receives several dozen patent declarations each year in response to its disclosure rules, an increasing number of which come from Asia. When considering these numbers, it is important to note that a single declaration can sometimes identify hundreds of patents believed to be essential to a standard under development. Moreover, as ITU allows parties to submit ‘blanket declarations’, some declarations will not specify whether they relate to a single patent or to a large patent portfolio.

**Figure 2. Number of patent declaration statements by regional origin, 2000-2013**



### 3. Standard-essential patents

27. Tension concerning standard-essential patents has increased in recent years, particularly among parties involved in the wireless, smartphone and tablet computer industries. This has prompted ITU to step up the frequency of meetings it holds with industry, competition authorities, standards-development organisations and governments to examine the effectiveness of patent policies and to discuss high-level principles clarifying the meaning of “reasonable and non-discriminatory” in RAND.

28. Standardisation plays a fundamental role in connecting businesses and society and in promoting innovation and new technologies. Balancing the rights of standard-essential patent holders and standards implementers is critical to the health of the patent system, market competition and the standardisation process.

29. The main tool ITU employs to safeguard a fair balance between stakeholder interests is the ITU-T/ITU-R/ISO/IEC Common Patent Policy and related Guidelines agreed in 2007. As indicated above, central to the Common Patent Policy is the principle of standard-essential patent holders committing themselves to licensing their standard-essential patents to standards implementers on a reasonable and non-discriminatory basis.

30. Because most of the intellectual property rights policies of standards-development organisations do not explicitly define specific parameters or requirements for reasonable and non-discriminatory licensing, debates regarding the meaning of reasonable and non-discriminatory commitment can arise in private licensing negotiations as well as in litigation between parties that cannot agree on reasonable and non-discriminatory licensing terms for their standard-essential patents.

31. Many of the positions of stakeholders arise from concerns relating to patent “hold-up” — abuse by the patent holder of its position after a standard has been completed.

32. The patent hold-up concern arises because many practitioners of the standard (that is, potential licensees in standard-essential patent licensing negotiations) have invested substantial resources in developing and marketing products that comply with a given standard, to the point where it would not be economically feasible, and not good for promulgation of the standard, for that company to shift to non-compliant products or to withdraw from the market altogether. Because a standard-essential patent by definition cannot be worked around, it can obtain market power if there is a marketplace demand for products to conform to the standard in question.

33. On one hand, once companies have made substantial investments, they can become “locked into” a standard for all practical purposes, and can be vulnerable to efforts by a given standard-essential patent holder to extract exorbitant royalties far in excess of the value of the underlying patented technology. Thus, without some constraint on the standard-essential patent holder’s ability to maximise royalties for standard-essential patent licensing, a locked-in manufacturer may become compelled to pay grossly excessive, unreasonable and discriminatory royalties rather than risk an injunction that would render it unable to market standard-compliant products. The locked-in manufacturer will then pass these extra costs onto consumers. In fact, many commentators argue that these hold-up situations raise competition law concerns, that preventing hold-up is a primary purpose of the reasonable and non-discriminatory commitment, and that the scope of the reasonable and non-discriminatory commitment should be interpreted accordingly.

34. On the other hand, many standard-essential patent holders have invested significantly in research and development for standardised technology, and the reasonable and non-discriminatory commitment allows for “reasonable” compensation for the standard-essential patent holder. Some standard-essential patent holders have raised concerns that policies limiting their rights when enforcing standard-essential

patents (such as limitations on the right to seek injunctions for infringement), or policies limiting the royalties that standard-essential patents may earn, can incentivise potential licensees to become unreasonably aggressive in licensing negotiations and to hold out for royalties lower than what the patent holder should be entitled to on a reasonable and non-discriminatory basis.

35. ITU convened a high-level patent round table in October 2012<sup>8</sup> to examine the effectiveness of reasonable and non-discriminatory patent policies and to consider whether these policies are in need of reform. Since then, the TSB Director's Ad hoc Group on Intellectual Property Rights and experts from a number of companies as well as government officials and regulators have expended time and resources in attempting to reach consensus on what constitutes reasonableness and non-discrimination, and on the use of injunctive relief.

36. In May 2014, the Ad hoc Group reached unanimous agreement on a proposed amendment to the current Patent Guidelines, as well as on the addition of related text to the declaration form, to make it clear that reasonable and non-discriminatory licensing commitments made to ITU are intended to bind both the current patent holder and subsequent purchasers of the patents. The Telecommunication Standardization Advisory Group (TSAG) – the body within ITU-T responsible for the approval of proposed changes to the patent policy - endorsed these proposals at its meeting held in Geneva in June 2014.

37. But while consensus has been reached on the transfer of licensing commitments, there are still significant differences of opinion among industry on injunctions, reasonableness and non-discrimination.

38. Regarding the issue of the availability of injunctive relief in the case of RAND-encumbered standard-essential patents, the meaning of “reasonable” in the RAND context, and the “non-discriminatory” prong of the RAND commitment, TSAG requested that discussion should continue in the TSB Directors' Ad hoc Group on IPR to try to resolve such issues. The next three meetings of the Ad hoc Group on IPR will be taking place on 1-3 December 2014, 3-5 February and 15-17 April 2015. A report will be presented to the June 2015 session of TSAG on the results achieved.

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<sup>8</sup> <http://www.itu.int/en/ITU-T/Workshops-and-Seminars/patent/Pages/default.aspx>