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STANDARDS AND PATENTS*

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EXECUTIVE SUMMARY

Current landscape regarding standardization

1. The vast majority of products currently on the market were developed in compliance with, or in conformity with, one or more standards. Many standards aim at protecting human safety, health or the environment. Further, standards play an important role in promoting compatibility and interoperability of products or parts from different producers. The standardization also facilitates the exchange and mutual use of information among the parties involved, thereby enabling different products to work together.
2. A technical platform set in the context of standardization offers economies of scale, and may also encourage a level playing field for competing entities. From the government perspective, standardization is increasingly acknowledged as a tool that supports various national public policies, such as public safety and health policy, industry policy and trade policy. Standards protect consumers from deceptive practices by ensuring the quality and safety of products and services. Increased interoperability may be translated into greater utility of products and an increased choice of complementary products at lower prices. In order to reap these benefits, the adopted standards as well as standardization processes should not stifle competition and discourage innovation, and should ensure fair access to, and use of, standards by those who implement them.
3. In general, there are two categories of standards: *de facto* standards and *de jure* standards. *De jure* standards are set by standard setting organizations (SSOs), which coordinate and facilitate a standard setting process with the involvement of various stakeholders. The SSOs may be international, regional or national. In certain cases, companies of their own accord form a consortium to establish technical standards in a particular field or industry. Among technology standards, there is a particular interest in “open standards”.
4. In view of globalization and increased economic interactions among States, the importance of developing international standards is increasing in many industries. Recognizing the important contribution that international standards can make to facilitate international trade, the Agreement on Technical Barriers to Trade (TBT Agreement) was concluded as an integral part of the Agreement establishing the World Trade Organization (WTO).

Interface with the patent system

5. Patents and standards serve certain common objectives insofar as they both encourage or support innovation as well as the diffusion of technology. So long as the patent system motivates companies to contribute their technologies to standardization, and consequently, the best solution is adopted as a standard for a wide use in the market at reasonable cost, the patent system and the standardization process share the objective of promoting innovation and diffusion of technology. However, if patent rights are enforced in a way that may hamper the widest use of standards, some antagonism between the two systems may arise.
6. One possible scenario is that a patent owner who has been participating in the standard-setting process may conceal existing patents or pending applications which are essential to implementation of the standard under discussion (essential patents) with a view to enforcing the patent rights only after the adoption of the standard and refuse to license the

patent on reasonable terms and conditions. Another scenario is that an essential patent may be owned by a patentee who did not participate in the standard-setting process and who may enforce the patent rights in a manner that discourages or blocks implementation of the standard. The latter “hold-up” problem may also arise where a standard is affected by a number of patents owned by different patentees. Even if each patent owner is willing to license his patent on reasonable terms and conditions, the total royalty claim may inhibit implementation of the standard.

7. The proper functioning of the patent system also has an influence on the proper functioning of the standard system. Addressing the quality of granted patents, the pendency period between the filing of a patent application and grant of a patent, and the cost of obtaining and maintaining patents internationally and for solving disputes, are some of the general challenges that the patent system faces today.

8. In order to prevent potential conflicts from arising between the patent and standard systems, several avenues have been pursued. One is to improve the self-regulatory mechanisms of SSOs (SSOs’ patent policies) so as to increase transparency and accessibility to patented technologies that cover the standards. A second approach is to seek pragmatic solutions in the market, such as forming a patent pool to reduce the transaction cost for licensing arrangements. A third relates to the application of legislative measures, which may be internal or external to the patent law itself, and may relate, in particular, to the application of competition law.

Patent policies of SSOs

9. Many SSOs have adopted patent policies which encourage early disclosure of essential patents and patent applications and seek assurances from the patent holders as to certain licensing terms, such as reasonable and non-discriminatory (RAND) terms, fair, reasonable and non-discriminatory (FRAND) terms, or royalty-free (RF) terms. If the patentee does not agree to accept such conditions, the standard under consideration may not be adopted, or the SSO may decide to further review the standard. In general, SSO’s patent policies stipulate that the relevant information be submitted during the standard setting process (or even after such process) and set out the procedures for such submission and the consequences of non-compliance with the requirements. Generally, patent disclosure statements and licensing declarations are published by SSOs.

10. In general, SSOs are reluctant to be actively involved in verifying the validity of disclosed patents, evaluating the relevance and essentiality of notified patents, assessing the compliance with the declared licensing terms, and taking part in potential disputes that may arise. The detailed licensing arrangements are negotiated outside the standardization process between the parties concerned. Since the patent policies are rules established by the SSOs as a means of self-regulation, those rules do not bind parties who are not participating in the SSOs’ standardization procedures. The patent policies of the various SSOs differ considerably. Each SSO tunes its patent policy to fit its own needs. In this document, the patent policies of (i) ITU, ISO and IEC; (ii) ETSI; (iii) ANSI; (iv) IEEE-SA; and (v) W3C are described.

11. In general, SSOs believe that their IPR policies are fairly effective as evidenced by the infrequency of IPR problems associated with their standards. Practitioners involved in standardization procedures nevertheless consider that there is room for improvement of SSOs’

patent policies. Possible areas for improvement relate to the transparency, clarity and certainty of patent policies, including the following:

- clarification of terms used in the patent policies;
- *ex-ante* disclosure of licensing terms, which go beyond the unspecific RAND or FRAND terms, by the patentees of essential patents, on a voluntary basis, before the adoption of the standard under discussion;
- effective identification of potentially essential patents at an early stage of the standard-setting process;
- effective enforcement of SSOs' patent policies;
- areas of interaction between an SSO's patent policy, in particular, RAND or FRAND licensing terms, and open source software licenses.

Patent pools

12. In cases where a standard includes a number of essential patents owned by a number of different patent holders, the coordination problem becomes apparent. A patent pool operates under an agreement enabling the participating patentees to use the pooled patents and providing a standard license for permitting others to use the pooled patents. The agreement also provides for the allocation of a portion of the licensing fees among members of the pool. The licensing terms and conditions will differ from one pool to another. As regards standard-related patent pools, in order to ensure non-discrimination among licensees, a most-favorable royalty clause is typically included. The pool license is normally applicable to any patents which may in future be included in the pool. Further, some patent pools include an obligation on licensees to grant-back any essential patents on a fair, reasonable and non-discriminatory basis. Further, a defensive termination clause is also found in some pools. Since participation in a patent pool is voluntary at the option of patent holders, the patent pool alone can not wipe out hold-up concerns totally. Further, since patent pools involve coordination and agreements among competitors, they may raise antitrust concerns.

Legislative measures

13. Broadly stated, measures such as patent policies of SSOs, cross-licensing and patent pools are contractual solutions among involved parties to increase legal certainty for the sake of efficient and effective implementation of standardized technologies. The contractual approach has the advantage of providing flexible solutions agreeable to all involved parties that best meet needs in each specific situation. However, the application of legal mechanisms, either internal or external to the patent system, is another possible avenue which would have the advantage of more universal applicability. The opponents of such a legislative approach argue, however, that interfering too much in the standard-setting process via legislative measures would have an adverse impact on incentives for investment and innovation. With respect to legislative measures internal to the patent system, exclusions from patentable subject matter and exceptions and limitations to the enforcement of patent rights have been suggested as relevant mechanisms. Some proposed that the mechanism of the so-called "license of right" under the patent law might be explored in order to ensure access to the technologies incorporated in the standards at reasonable costs.

Aspects of competition law

14. Patent laws intend to promote innovation and consumer welfare by granting a limited exclusive right to a patentee for a limited period and requiring public disclosure of inventions. On the other hand, competition laws also seek to promote innovation and consumer welfare by ensuring fair functioning of the market and, in particular, that market entry is not unduly prevented or made difficult.

15. A patent does not automatically confer market power upon the patentee. However, if competition is distorted by behavior by a patentee in dominating a market or by following anti-competitive practices that tend to lead to such a dominant position, competition law would be applied to deal with such an abuse so as to restore fair competition in the market. Similarly, patent licensing agreements have competitive elements in the sense that they promote efficient transfer of technology by integrating the licensed technology into the licensee's assets. However, a competition law concern may arise if a licensing agreement contained restraints that adversely affect competition among entities that would have been competitors in the relevant market in the absence of the license.

16. When technologies under standards are protected by patents, some specific competition law concerns may arise. Once a standard is adopted covering a technology that falls under patent protection, a patentee may be in a position to demand higher royalties or other unreasonable terms and conditions to license his technology to the implementers of such standard in view of the absence of alternative technology. In this document, competition concerns relating to non-disclosure of essential patents against the patent policy of SSO, *ex ante* disclosure of licensing terms during the standardization process, and patent pools are further described.

Settlement of disputes

17. Where a private dispute arises, one way of settling such dispute is litigation, that is, by submitting a case to a competent court. However, court litigation, and in particular, litigation at the international level, involves a multitude of procedures in different jurisdictions with a risk of inconsistent outcomes. Mediation, arbitration or other alternative dispute resolution (ADR) procedures allow parties to sidestep such issues and resolve private disputes in what can be, if well managed, a simpler and more cost-effective manner.

18. In connection with standardization activities, there are a number of potential situations where any disputes over related patents may arise. The WIPO Arbitration and Mediation Center offers ADR options for the resolution of commercial disputes between private parties. The arbitration, mediation and expert determination procedures offered by the Center are particularly suited to cross-border dispute settlement. The Expert Determination is particularly suitable where it is necessary to determine issues of a technical or scientific nature, such as disputes relating to the interpretation of claims, the extent of the rights covered by a license, or the establishment of royalty rate.

Technical and patent information available under the patent system and the standardization system

19. From the viewpoint of the patent system, information disclosed during the standard-setting process may be prior art information in the patent law sense. Appropriate consideration by patent offices of prior art information generated during the standard-setting

process would ensure the quality of granted patents and increase legal certainty. Such information, however, is not easily accessible and immediately usable by patent offices at the international level. Further, the confidential/public nature of such information, as well as the date on which the information was made available to the public, need to be clarified.

20. From the viewpoint of the standardization system, patent information available from patent offices may increase the transparency of the standardization process. Dynamic, up-to-date patent information, which includes both technical and legal status information, is found in the registry of the relevant patent office. While the information in the registry is made available to public inspection, a limited number of offices provide an on-line service for obtaining access to such information.

I. INTRODUCTION

21. At the twelfth session of the Standing Committee on the Law of Patents (SCP), which was held from June 23 to 27, 2008, in Geneva, the SCP asked the WIPO Secretariat to establish, for the next session of the SCP, preliminary studies on four issues. These four issues are:

- Dissemination of patent information (*inter alia* the issue of a database on search and examination reports);
- Exceptions from patentable subject matter and limitations to the rights, *inter alia* research exemptions and compulsory licenses;
- Patents and Standards;
- Client-attorney privilege.

22. These four issues are not to be considered prioritized over other issues contained on the list which was established during the twelfth session of the SCP and was contained in the Annex to document SCP/12/4 Rev. (see paragraph 8(c) of document SCP/12/4 Rev.).

23. Accordingly, this document has been prepared by the Secretariat as a preliminary study on the issue of patents and standards for the thirteenth session of the SCP, to be held from March 23 to 27, 2009.

24. Although the SCP primarily deals with clusters of issues relating to patent laws, this document, in view of the cross-cutting nature of the subject, first provides general descriptions of standards and standard-setting processes. It then moves on to look at the interface with the patent system, examines potential tensions between the standardization system and the patent system, and provides information on possible mechanisms that have been pursued to prevent conflicts from arising. They include: patent policies of standard setting organizations; patent pools; legal mechanisms inside the patent system; competition law aspects; dispute settlement; and technical and patent information available under the patent system and the standardization system.

25. At the twelfth session of the SCP, it was clarified that the *modus operandi* of the Committee, namely, to move forward along a number of tracks, including the preparation of preliminary studies, was agreed upon for the purpose of developing the work program of the SCP (see paragraph 123 of document SCP/12/5 Prov.). With a view to this specific background, the preliminary study would contextualize the current issues regarding standards and patents, and would contain no conclusions.

II. CURRENT LANDSCAPE REGARDING STANDARDIZATION

(a) What Are Standards?

26. Our lives are surrounded by technical standards. A vast majority of products currently on the market were developed in compliance with, or in conformity with, one or more standards. As the standards regarding food products or cars may suggest, conformity of products and services to standards is not only a matter of practical convenience but also provides an assurance about their quality, safety and reliability. Furthermore, standards are considered to be an important way of promoting wide adoption of new technologies in the market place, in particular in, but not limited to, the field of information and communication technologies (ICT).

27. Subject matter under standardization could be very broad. It includes, among others, engineering technologies, health, safety and environment, transport, distribution of goods, construction, agriculture and foods. It may cover products, processes and services, and standards may provide various technical characteristics, such as physical characteristics, functional characteristics, steps, protocols and rules. Some standards cover management systems, such as quality management systems and environment management systems. Despite its wide usage, it seems that there is no single, universal definition of the term “standards”. According to the ISO/IEC Guide 2:2004 *Standardization and related activities - General vocabulary*, the term “standard” is defined as a “document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context”. It is also noted that “standards should be based on the consolidated results of science, technology and experience, and aimed at the promotion of optimum community benefits”. The Agreement on Technical Barriers to Trade (TBT Agreement) defines the term “standard”, for the purpose of that agreement, as a “document approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for products or related processes and production methods, with which compliance is not mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labeling requirements as they apply to a product, process or production method.” Thus, under the TBT Agreement, standards are defined as voluntary documents, while the term “technical regulations” is used for mandatory documents. Further, the TBT Agreement covers documents that are established by consensus as well as non-consensually.

28. For the purpose of this study which addresses the relationship between patents and standards, it appears that the term “standard” could be construed in a broad sense since, as will be discussed below, inherent tensions between the patents and standards systems arise from the legitimate exclusive right conferred by a patent on the one hand and, on the other hand, the desirability of wide implementation of standards, whether voluntary or mandatory, by a wide range of stakeholders.

(b) Objectives, Advantages and Consumer Needs

29. The objectives of standardization may be multi-faceted, as it covers a wide variety of products, processes and services. Many standards aim at protecting human safety, health or the environment. They are often essential for sustaining our lives, and contribute to the improvement of the quality of life. In general, standards ensure quality and reliability of products, processes or services.

30. So-called technical standards, which are technical specifications allowing the replacement of one part of a given product with another part, or the assembly of such parts, play an important role in promoting compatibility and interoperability of products or parts from different companies. Further, particularly in the field of ICT, standardization facilitates the exchange and mutual use of information among connected parties, thereby enabling different products to work together. Therefore, standards facilitate developing compatible and interoperable products by providing technical platforms and interfaces, and promote efficient development, manufacturing and supply of products to the market. In conjunction with the increasing importance of ICT in the information society, more and more attention has been paid to the role of standards in supporting interoperability in the network society where technical standardization plays an important role in connecting people anywhere and anytime.

31. A technical platform set by standardization offers economies of scale, and may also provide a level playing field for competing entities which thrive to offer the best product that is in conformity with the standards. Therefore, in an efficient market system, standards reduce transaction costs along the supply chain to consumers, thus facilitating commerce and trade in goods and services. In addition, many technical specifications adopted as standards are published and made available to the public. Therefore, standards also promote dissemination of technology and business practices.

32. In sum, standards today play an important role in improving compatibility and quality of products and services in the market. From a government's perspective, standardization is increasingly acknowledged as a tool that supports various national public policies, such as public safety and health policy, industry policy and trade policy. From the viewpoint of consumers, improved interoperability may be translated into better utility of products and simplified processes, and an increased choice of complementary products with, as a result of competition, lower prices. Further, standards protect consumers from deceptive practices by ensuring the quality and safety of products and services so that consumers can place greater confidence in the market.

33. For the business sector, particularly in the area of ICT, standardization is recognized as a strategic business tool that is essential in gaining a competitive position in the market. Standards reduce the costs that may be required to design, manufacture and deliver products in different configurations. In addition, standardized technology may increase the entire value and volume of the market if the interoperability facilitated by standards offers considerable advantages and benefits to consumers.

34. In order to reap the above benefits, the adopted standards as well as standardization processes should not stifle competition and discourage innovation, and should ensure fair access to, and use of, standards by those who implement the standards. Otherwise, there is a potential risk that standardization may lock users in to a specific technology platform due to a high switching cost, may reduce choice of products and services and may lead to market concentration.

(c) Standardization Processes

(i) Types of Standards

35. Generally speaking, there are two categories of technical standards: *de facto* standards and *de jure* standards. A *de facto* standard is created when a particular technology is widely implemented by market players and accepted by the public so that such a technology becomes a dominant technology in the market even if it has not been adopted by a formal standard setting body. *De jure* standards are, in general, set by standard setting organizations (SSOs). The role of SSOs is to coordinate and facilitate a standard setting process with the involvement of various stakeholders.

36. SSOs may be international, regional or national. International SSOs (for example, the International Organization for Standardization (ISO), whose members represent national and regional SSOs or national governments) develop international standards. Regional SSOs (for example, the European Telecommunications Standards Institute (ETSI) and the African Organization for Standardization (ARSO)) develop or coordinate standards for use in a particular region. Many regional bodies assist national SSOs and cooperate at the regional level. This facilitates the harmonization of standards and conformity assessments within the region.

37. For the national application of standards, national SSOs may develop their own national standards or may adopt international standards that have been developed through an international consensus. National standards may be either mandatory or voluntary. In general, mandatory standards are set in areas relevant to public safety, health or protection of the environment, while in most areas, adoption and implementation of standards are voluntary in the sense that participation in the adoption of the standards as well as the use of such standards, is voluntary. Various stakeholders, such as manufacturers, consumers, trade associations and professional associations, may participate in the standard-setting process. In some countries, the national SSO is part of the national government (for example, the Standardization Administration of the People's Republic of China (SAC)), whereas in some others, it is an independent organization but closely related to the government (for example, the Japan Industrial Standards Committee (JISC)). In the United States of America, a national standardization system consists of a number of governmental and non-governmental SSOs, where the American National Standards Institute (ANSI), a non-governmental organization, accredits SSOs and approves standards developed by those SSOs as the American National Standards. The statutes, governance, financing mechanism and operational structure may depend on the government policy and the socio-economic conditions of each country.

38. In certain cases, companies form a consortium to establish technical standards in a particular field or industry. Compared with the formal adoption of standards by SSOs, in general, consortia may have more flexibilities to develop standards in a shorter period. Therefore, this type of standards is often developed and applied in the fast-moving technologies, such as ICT. For example, the Internet Engineering Task Force (IETF) and the World Wide Web Consortium (W3C) are significant standard-setting bodies for the Internet and the world-wide-web.

(ii) Standardization Processes

39. In general, *de jure* standards are developed by a wide range of stakeholders who share interests in the setting-up and use of standards in a particular field. The exact process of establishing standards varies from one SSO to the other. However, in general, where there is a need for a new standard, a request may be submitted to a SSO by an interested party. If such request is accepted, a technical committee is formed to draft, develop and adopt the standard. Generally speaking, technical experts who have volunteered to participate in and contribute to the standardization process, and other interested stakeholders, participate in such a committee.

40. Standards developed by one body are sometimes referred to by other bodies. International standards may be adopted for national use, national standards may become international standards adopted by international SSOs, and standards established by consortia may become international standards once an international consensus is reached. As a technology becomes more and more complex, a standard may incorporate by reference other standards developed and adopted by the same SSO or by other SSOs.

(iii) Open Standards

41. Among technology standards, there is particular interest in “open standards”. While there is no universally accepted definition of that term, all open standards have the following common characteristics: (i) the specification is publicly available at no cost or for a reasonable fee to any interested party; (ii) any IP rights necessary to implement the standard are available to all implementers on reasonable and non-discriminatory (RAND) terms, either with or without payment of a reasonable royalty or fee; and (iii) the specification should be in sufficient detail to enable a complete understanding of its scope and purpose and to enable competing implementations by multiple vendors. Some define open standards as publicly available technical specifications that have been established in a voluntary, consensus-driven, transparent and open process.¹ For example, ITU-T defines “open standards” as follows²:

“Open Standards” are standards made available to the general public and are developed (or approved) and maintained via a collaborative and consensus driven process. “Open Standards” facilitate interoperability and data exchange among different products or services and are intended for widespread adoption.

Other elements of “Open Standards” include, but are not limited to:

– collaborative process – voluntary and market driven development (or approval) following a transparent consensus driven process that is reasonably open to all interested parties.

¹ The Global Standards Collaboration (GSC) defines the term “open standards” in its Resolution GSC-12/05: Open Standards (July 12, 2007) [www.gsc.etsi.org]. The definition by ANSI can be found at:
<http://publicaa.ansi.org/sites/apdl/Documents/Standards%20Activities/Critical%20Issues%20Papers/Griffin%20-%20Open%20Standards%20-%202005-05.doc>.

² <http://www.itu.int/ITU-T/othergroups/ipr-adhoc/openstandards.html>.

- reasonably balanced – ensures that the process is not dominated by any one interest group.
- due process – includes consideration of and response to comments by interested parties.
- intellectual property rights (IPRs) – IPRs essential to implement the standard to be licensed to all applicants on a worldwide, non-discriminatory basis, either (1) for free and under other reasonable terms and conditions or (2) on reasonable terms and conditions (which may include monetary compensation). Negotiations are left to the parties concerned and are performed outside the Standard Development Organization (SDO).
- quality and level of detail – sufficient to permit the development of a variety of competing implementations of interoperable products or services. Standardized interfaces are not hidden, or controlled other than by the SDO promulgating the standard.
- publicly available – easily available for implementation and use, at a reasonable price. Publication of the text of a standard by others is permitted only with the prior approval of the SDO.
- on-going support – maintained and supported over a long period of time.

42. As regards the availability of patents covered by standards, definitions of the kind set out above include as an element a patent policy providing for licensing on non-exclusive, reasonable and non-discriminatory terms and conditions, either with or without royalty payment, on a worldwide basis. Such a policy is based on belief in the co-existence of royalty model and a royalty-free model under the reasonable and non-discriminatory terms and conditions, and that the provision of such flexibility will meet the interests of implementers of the standard and those of patent holders who may seek to receive reasonable and adequate compensation for sharing their contribution. A royalty-free environment alone is not considered appropriate in view of maintaining investments in R&D in the long run and a broad participation and voluntary cooperation among technology holders in the standard-setting processes.

43. On the other hand, others consider that an open standard must be royalty-free.³ Advocates of that approach are convinced that society as a whole would benefit from the open and royalty-free access to standards, as is the case, for example, in the Internet context, which was established precisely in order to allow the free publication and retrieval of information from the web. According to this view, the royalty-free model would best promote interoperability, greater innovation and consumer welfare. In addition, it is argued that, even where a royalty-free policy is adopted, the commercial benefits of standardization may outweigh the loss of royalty income in certain technologies, simply in that greater quantities of a certain product will be sold.

³ For example, see the definition of the term “open and free standards” by the Digital Standards Organization.

44. In this context, the notion of “open source” is often mentioned, but it should not be confused with open standards. While open standards are technical specifications developed in transparent and open processes and are available for implementation on reasonable and non discriminatory terms, but not necessarily royalty free, “open source” rather refers to a software distribution model based on an IPR, mainly copyright. Generally speaking, open-source software refers to software for which the source code (underlying programming code) is made freely available for use, reading the code, changing it or developing further versions of the software, including adding amendments to it. Today, ICT standards may be implemented using open source software, proprietary software or, as is increasingly the case, mixed platforms that combine both open source and proprietary software. When governments and other users are in the process of selecting a specific technology to meet their needs for interoperability and/or free use of that technology, in addition to the open or proprietary nature of any software involved, factors such as overall costs, the maturity of the technology, legal factors and the support offered, should be taken into account.

(d) International Dimension of Standardization

45. In view of the globalization and increased economic interactions among States, the importance of developing international standards is increasing in many industries. Where goods and services are standardized internationally, it is likely that the development, manufacture and delivery of products and services will be more efficient and effective at the international level, since companies can avoid additional expenses and complexities to meet the requirements of different national standards. In the area of ICT, international standards may be particularly important in view of international connectivity.

46. Three international SSOs, namely, the ISO, the International Electrotechnical Commission (IEC) and the International Telecommunication Union (ITU), have their headquarters in Geneva. The ISO and the IEC are non-governmental organizations, which are composed of national standards bodies. The ITU is one of the specialized agencies of the United Nations agencies, dealing with information and communication technologies, and with 191 Member States and more than 700 Sector Members and Associates. The Telecommunication Standardization Sector (ITU-T) is in charge of standardization activities. The ISO, the IEC and the ITU together form the World Standards Cooperation (WSC), which was set up in order to strengthen and advance the voluntary consensus-based international standards systems of those organizations. The WSC promotes the adoption and implementation of international consensus-based standards worldwide, and resolves any outstanding issues regarding cooperation in the technical work of the three organizations.

47. Recognizing the important contributions that international standards can make to facilitate international trade, the Agreement on Technical Barriers to Trade (TBT Agreement) was concluded as an integral part of the Agreement Establishing the World Trade Organization (WTO). Although national standards may need to take into account national social and cultural specificities, levels of income, and geographical and other factors, as well as basic human needs such as safety, health, environmental protection and national security, if the standards are set and applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries, they might create unnecessary obstacles to international trade. The TBT Agreement tries to ensure that standards and technical regulations do not create unnecessary trade obstacles by introducing the principles of impartiality (national treatment and most-favoured-nation principles), openness, transparency and coherency. The Code of Good Practice for the Preparation, Adoption and Application of Standards, which is contained in Annex 3 of the TBT Agreement, provides disciplines for the

preparation, adoption and application of standards by SSOs in Members of the WTO. Central government standardizing bodies shall accept the Code, and it is open for acceptance by other SSOs. More than 200 SSOs adhere to the Code.

48. The Code states that standardizing bodies shall use international standards as a basis for the standards they develop, except where such international standards would be ineffective or inappropriate because of, for instance, an insufficient level of protection or fundamental climatic or geographical factors or fundamental technological problems. It also aims at the harmonization of standards, encouraging all standardizing bodies to play as full a part as possible in the preparation of international standards by the relevant international standardizing bodies, and avoiding duplication of, and overlap with, works carried out by international standardizing bodies.

49. With a view to technical and financial resources that may be required to implement international standards, the TBT Agreement provides certain special and differential treatments for developing country Members. For example, in view of their particular technological and socio-economic conditions, developing country Members may adopt standards aimed at preserving indigenous technologies and production methods and processes compatible with their development needs. Further, developing country Members should not be expected to use international standards as a basis for their standards which are not appropriate to their development, financial and trade needs. In August 2005 at the TBT Committee, China called for WTO Members to exchange practices and experience on IPR policies in the context of the triennial review of that Committee with a view to facilitating the setting and implementation of international standards and more effective implementation of the TBT Agreement.⁴

III. INTERFACE WITH THE PATENT SYSTEM

50. In the past, standardization was considered as a technical issue for engineers. Today, however, the strategic importance of standards for business is better recognized. Similar to a company's IP strategy, some companies establish a strategic standardization policy as an integral part of their business model and corporate strategy.⁵ On the one hand, greater attention has been given to patents as important intangible assets and, as a result, a rising number of patents are acquired and exploited strategically. On the other hand, ensuring that the objectives and goals of standardization are adhered to is important for the strategic business goals of many companies. The better the importance of both systems is recognized, the more the essential characteristics of both systems are highlighted. Consequently, various stakeholders, including policy makers, SSOs, market players and academics, have been engaged in discussions concerning an interface between the patent system and the standardization system and the best practice for their convergence.

(a) Patent System: Commonalities with the Standard System

51. Patents and standards serve common objectives, insofar as they both encourage innovation as well as the diffusion of technology. The patent system intends to encourage

⁴ WTO document G/TBT/W/251, G/TBT/W/251 Add.1.

⁵ "IBM announces new I.T. standards policy"
[<http://www-03.ibm.com/press/us/en/pressrelease/25186.wss>].

innovation by granting a limited exclusive right, and at the same time, to promote the diffusion of technology through mandatory complete disclosure of patented inventions. In general, a patent confers an exclusive right to prevent others, without consent of the owner of the patent, from making and using the patented invention during a limited period of time. Such an exclusive right enables the patent owner to choose whether, for example, to (i) make or use the patented invention himself/herself and prevent others from doing so; (ii) grant a license to (a) third party(ies); or (iii) sell the patent to (a) third part(ies). Therefore, the patent system provides various options for a patent owner to exploit a patent so that he/she might recover the investment in the best possible way, which will of course depend on the business and market environment in which the patent owner is active.

52. Once a patent application is filed, technology producers are required to disclose their achievements openly to the public through the publication of patent applications and/or patents. In many countries, because of the “first-to-file” system (under which, where there is more than one applicant for the same invention, the one who filed a patent application first will obtain the right to a patent), technology producers are motivated to file a patent application as early as possible, and the patent application will be published 18 months after the filing date (or the priority date) of the application. Such publication, which to an increasing extent results in patent documents being available on the Internet free of charge, allows competitors and the public to share ideas and further advance the existing state of the art.

53. Noting particularly that a patent involves the grant of an exclusive right, patents are granted only for inventions that meet certain patentability criteria, notably, novelty, inventive step (non-obviousness) and industrial applicability (utility). Generally speaking, therefore, patents cannot be validly granted for inventions that already exist or that are obvious (do not involve an inventive step) based on a comparison with the existing knowledge in the relevant field (prior art). Although the definition of prior art may differ in certain respects from one country to another, the information disclosed and made available to the public during the standardization process thereby becomes part of the prior art, and thus become relevant to the determination of the patentability of subsequent inventions. Therefore, from the viewpoint of the patent system, certain publicly available information disclosed during the standard-setting process must be taken into account in making determinations of patentability. From the viewpoint of the standardization system, a high legitimacy of the output of patent offices, that is, high quality of granted patents, is desirable, as it decreases the risk of royalty claims based on erroneously granted patents.

(b) Tensions and Ambivalence

(i) Issues Inherent in Patented Technologies in Standards

54. While the patent system and the standards system share certain common objectives, inherent tensions exist between patents and standards. These become particularly apparent when the implementation of a standard calls for the use of technology covered by one or more patents. Indeed, on the one hand, the objective of standardization, which in many cases involves companies interested in the development of the technology in question, is to establish standardized technology that can be used as widely as possible in the market. On the other hand, patent owners in the relevant area who have invested resources in developing the patented technology may have an interest in the adoption, in the standard, of their own patented technology which may bring them, at a later stage when the standard is being

implemented and applied, royalty income. Without any possibility of return on investments, patent owners may be reluctant to contribute their technology to the standardization process.

55. So long as patent owners are motivated to contribute their patented technologies to standardization, and consequently, the best solution is adopted as a standard for wide use in the market with a reasonable cost, it appears that the patent system and the standard system share and support the objectives of promoting innovation and diffusion of technology. However, if the exclusive patent right, which is of course a statutory right granted to the patent owner, is enforced in a manner that may hamper the widest use of standardized technology, an ambivalence between the two systems may arise.

56. In contrast with tangible assets, intangible IP assets such as patents are characterized by the fact that they can be used simultaneously by many people and in different markets (non-rivalry), their value can be expanded with the size of the market, and their usage increases their value (contrary to tangible assets, the value of which generally decreases with usage). Therefore, it appears that the inclusion of patented technology in standards provides a setting where a patent holder may be able to fully exploit those characteristics of IP assets. On the other hand, it is also possible to identify certain scenarios where the legitimate exploitation of patent rights may not fully support the wide implementation of technical standards.

[Patent hold-up (patent ambush)]

57. Once a patented invention is incorporated in the standard, the patent owner may in fact have a competitive advantage over other market players, since others may have no choice but to use the patented technology in order to comply with the standards. If a technology covered in the standard is under patent protection and there is no alternative technology available, the patent becomes essential for the implementation of the standard concerned. In such a situation, depending on the costs that would be involved in obtaining an agreement with the patentee for the use of the patented technology, other parties may be discouraged from using the standard. This certainly goes against the objectives of standardization.

58. Under one possible scenario, a patent owner who has been participating in the standard-setting process may conceal (or at least not adequately disclose) existing or pending essential patent rights during the process of adopting a standard, and may enforce the rights only after such adoption (or only after the standard is widely used) but refuse to license the patent under reasonable terms and conditions (this scenario has been described as a “patent hold-up” or “patent ambush”). Under another possible scenario, an essential patent is owned by a patentee who was not participating in the standard-setting process and who may enforce the patent in a manner that discourages or blocks the implementation of the standard. Under those scenarios, all the effort made in developing the standard by participants in the standard-setting process as well as by the SSO may be wasted, if it is subsequently found that an essential patent is preventing or disturbing implementation of the standard. Where the patent owner requires a level of royalties that would make it very difficult to produce the products implementing the standard, the result may be a significant impact on the consumer price of the product using the standardized technology. Therefore, the hold-up situation is not only a private matter between companies involved in the technical area concerned but is also an issue relevant to consumers and the public as a whole.

59. The extent of the hold-up problem in the real world, however, is somewhat debated. Some argue that such situations are rare exceptions in a system that otherwise functions well,

while others consider that only a small part of the problem appears on the surface, as business players may not be willing to raise the issues openly. There may be certain restrictions or benefits at work in the market that discourage patent hold-up, for example, peer pressure from competitors or a first mover advantage in the market.

[Transaction costs]

60. The patent hold-up problem may also arise even if each patent owner is willing to license his patent under reasonable terms and conditions. For example, in a field involving complex and cumulative technology, one standard may cover a number of patents owned by a number of different patentees. In order to implement such a standard, it is necessary to first identify the relevant patents, and then contact and negotiate with each of multiple owners. Although each patentee's royalty claim may be reasonable, the costs in total of implementing the standard concerned may become prohibitive.

(ii) Issues Relevant to Proper Functioning of the Patent System

61. There are other aspects with respect to the patent system which may be relevant to the standards. Firstly, while the development of international standards has become important in many fields, patent rights are territorial rights: as a general rule, a separate patent must be sought in each country in which patent protection is desired, and each patent can be enforced only in the territory of the country in which it was granted. National patent laws are different from one country to the other, both with respect to formality requirements and substantive requirements. Further, the practical implementation of the laws also varies across jurisdictions. Therefore, the same invention may be subject to different examination practices and interpretations, which may result, for example, in the grant of a patent in one jurisdiction and refusal of grant in another jurisdiction. In cases of a dispute regarding patents involving the same invention in a number of countries, separate litigation will in general be needed to solve the dispute in each territory. Therefore, achieving legal certainty and containing the costs involved in utilizing the patent system, especially at the international level, are among the major challenges facing today's patent system. The emergence of regional patent treaties and of the international patent filing route available under the Patent Cooperation Treaty have contributed to alleviate these problems, but have, obviously, not solved them.

62. Indeed, the questions described above as to patent hold-up and accumulated patent-related costs of obtaining access to technology are general concerns that have been raised in contexts going beyond the standardization. Some argue that so-called "patent thickets" can be observed in complex technologies and in technical fields where a number of companies compete at the same level and consequently, a fragmentation of patent ownership occurs. A changing research environment, increasing complexity and sophistication of technology, emergence of new areas of technologies that go beyond the boundaries of traditional "fields of technology", for example, bioinformatics and nanotechnology, may have an influence on the problems associated with patent thickets. Further, certain patenting strategies, for example, different strategies derived from different business models, may lead to various licensing and enforcement strategies which are new to traditional, production-based companies. The potential problems addressed are centered around excessive transaction costs and hold-up problems which may occur when a patentee refuses to license or demands an excessive royalty.

63. Further, with respect to patent filing activities, since 1995, patent filings have grown at a rapid rate. One of the recent trends is an increase in the level of internationalization of

patent filings. Applicants are increasingly seeking patent rights in foreign markets, which has caused an increase in the workload of patent offices. Some patent offices face a major challenge in meeting demand for the processing of patent applications in an efficient and timely manner.

64. Achieving an appropriate quality of granted patents, reducing the pendency period between the filing of a patent application and grant of patent, and containing the costs of obtaining and maintaining patents internationally and for solving disputes, are some of general challenges that the patent system faces today. If left unsolved, they may lead to further legal uncertainty and higher costs hampering the proper functioning of the patent system. Those general phenomena may influence the attitudes of standardization players, and may result in negative consequences in the context of standardization activities.

(c) Policy Challenges

65. From the policy standpoint, the most essential objective appears to be the encouragement of innovation and wide implementation of standards, taking into account the interests of: (i) patent holders in exploiting and enjoying benefits of their patents; (ii) third party producers who want to make and sell products compatible with the relevant standards at a reasonable price; and (iii) the public which seeks the widest possible choice among affordable and interoperable products. Further, in view of promoting innovation, a market environment that ensures healthy competition should not be compromised by standardization, for example, if possible price agreements reached during the standardization process would potentially exclude third parties from that process.

66. Although the patent system as well as the standardization system have both existed for a long time, potential tensions between the two systems have been increasingly brought to light in debates in the recent past. One reason may be an increasing importance of patents and standards in both business strategies and government's national and international policies. On the business side, new technologies foster new business models and various business strategies that make the most of the patent system and the standardization system. Consequently, there is a need to find a way of handling numerous proprietary technologies in standards and meet the objective of wide dissemination. From the policy perspective, since interoperability is crucial for communication in the information age, how to ensure interoperability in an environment that promotes innovation and competition becomes an important question to ask.

(d) Current Approaches

67. In order to ensure the smooth and wide dissemination of standardized technologies, while at the same time maintaining motivations for companies to innovate and participate in the standardization process, several approaches have been pursued to prevent potential conflicts from arising.

68. One such approach is to improve the self-regulatory mechanisms of SSOs for increasing transparency and accessibility to patented technologies. Many SSOs have adopted patent policies which encourage early disclosure of essential patents and patent applications, and seek assurances from patent holders to commit to certain licensing terms, such as reasonable and non-discriminatory (RAND) terms or fair, reasonable and non-discriminatory (FRAND) terms.

69. A second approach is to seek pragmatic and practical solutions in the market. For example, in order to address the issue of high cumulative royalties in the implementation of standards, a patent pool is formed to reduce transaction costs, or cross-licensing agreements may be concluded where two parties possess patents that block the activities of one another.

70. A third approach which has been looked into involves the application of legislative measures, either internal or external to the patent system. The latter relates, in particular, to competition laws that address certain aspects of the problem, such as abuse of a dominant position in fixing license fees.

71. The following Chapters will describe those three approaches more in details.

IV. PATENT POLICIES OF SSOS

(a) Patent Policies of SSOs: General Description

72. Many SSOs have established patent policies in order to promote the wide implementation of standards without undue constraints on the access to patented technology covered by the standards. To this end, those patent policies encourage the parties involved in the standard-setting process to disclose, to other members of the SSO, the existence of any relevant patents (and, sometimes, also patent applications) in technologies essential for the implementation of the technical standard under consideration, so that this fact can be taken into account during the standard setting process. In addition, SSOs typically seek assurances from the owner of an essential patent that the patented technology will be licensed on RAND or royalty free (RF) terms. If the patentee does not accept such a condition, the standard under consideration may not be adopted, or the SSO may decide to further review the standard.

73. In general, patent policies provide self-regulating rules concerning patent disclosure statements and licensing declarations. They stipulate the information to be submitted during the standard-setting process (or even after such process), the procedures for such submission, and the consequences of non-compliance with the requirements. They also clarify the role of SSOs and provide standardized forms for the submission of information. Generally, patent disclosure statements and licensing declarations are published by the SSOs, and if a standard is adopted with essential patents involved, that fact is noted in the standard.

74. Since the disclosure of any relevant patents and declarations as to licensing terms are intended to encourage early disclosure and identification of patents that may be relevant to the standards under development, the detailed arrangements arising from such patents, for example, an exact amount of royalty payment, are left to the parties concerned (that is, the patentee and the implementer of the standard) to negotiate outside the standardization process. In general, SSOs are reluctant to be actively involved in verifying the validity of disclosed patents, evaluating the relevance and essentiality of notified patents, assessing compliance with the declared licensing terms, and taking part in potential disputes that may arise.

75. The patent policies of SSOs are different from one SSO to the other. Since the technical coverage, the geographical coverage (which may be different, for example, for international and national organizations), and constitution (for example, a governmental organization or an industry-based consortium) of SSOs vary significantly, it appears that each SSO makes a fine-tuning of its patent policy that fits its own needs. For instance, if a technology is

essential to implement standards that are required for access to the Internet, the policy and practical needs of ensuring accessibility of such technology with a minimal cost could be greater than some other technologies. While allowing each SSO to develop its own rules in a flexible manner may best suit its specific needs, legal enforceability of those rules in relation to, in particular, non-members of the SSO may be compromised. Since the patent policies are self-regulating rules under the SSOs, those rules do not bind others who do not participate in the SSOs' standardization procedures.

(b) Examples of SSOs' Patent Policies

(i) ITU, ISO and IEC

76. Since March 2007, the ITU, the ISO and the IEC have had a Common Patent Policy for ITU-T/ITU-R/ISO/IEC, which provides a harmonized approach to addressing the inclusion of patented technology in standards. The Common Patent Policy is a "code of practice" regarding patents covering the subject matter of voluntary standards developed by those organizations. The Guidelines for Implementation of the Common Patent Policy are also established in order to clarify and facilitate implementation of the Common Patent Policy.⁶ Although the Guidelines provide some organization-specific provisions (see below), the patent policies of those three organizations are largely harmonized.

77. In order to encourage the disclosure of patented technology before the standardization process has been completed, the Policy states that any party participating in the standardization should, as early as possible during the development of standards, draw the attention of the ITU/ISO/IEC to any known essential patent or pending application which may be owned or applied by them or by another party. Further, any non-participant to the standardization process may draw attention of the ITU/IEC/ISO to relevant essential patents or applications. No definition of the term "essential patent" is provided in the Policy. It is understood that the definition of "essentiality" is left to the person who submits the patent disclosure statement.

78. This patent-related information should be provided in good faith and on a best effort basis. The Chair of the technical committee that develops the standard will, if appropriate, ask members about any relevant patents and patent applications at each meeting so that all participants are aware of the Common Patent Policy. However, there is no requirement for a participating party to conduct a patent search.

79. When disclosing essential patents, the "Patent Statement and Licensing Declaration Form" has to be used. If a patent or application of a third party is identified, the ITU/ISO/IEC requests that party to submit a Patent Statement and Licensing Declaration Form. The obligation to use a pre-printed form ensures standardized submission of the information. In the Form, a patent holder (a person or an entity that owns, controls and/or has the ability to license the essential patent) is required to provide his contact information, and choose and declare one of the three licensing mechanisms if his patent becomes essential to the implementation of the standard under consideration. Those three options are:

⁶ The Common Patent Policy and its Guidelines are available at the websites of the ITU, ISO and IEC, for example, <http://www.itu.int/ITU-T/ipr/>.

(i) the patent holder is prepared to grant a free-of-charge license to an unrestricted number of applicants on a worldwide, non-discriminatory basis and under other reasonable terms and conditions to make, use and sell implementations of the standard;

(ii) the patent holder is prepared to grant a license to an unrestricted number of applicants on a worldwide, non-discriminatory basis and on reasonable terms and conditions to make, use and sell implementations of the standard; and

(iii) the patent holder is unwilling to grant licenses in accordance with the conditions under (i) or (ii), above.

80. If the patent holder chooses option (iii), information concerning the relevant patent or application number, an indication of which portions of the standard are affected, and a description of the patent claims covering the standard, must be provided to ITU, and is strongly desired by ISO and IEC. The Form also provides a Table which provides entries for providing relevant information concerning the status of the patent or application, the filing country, the patent or application number and the title of the patent/application. Filling in the Table is desired but not required for options (i) and (ii), but is required, in the case of the ITU, for option (iii).

81. If a patent owner is not willing to comply with the conditions under option (i) or (ii), the standard must not include provisions whose operation is dependent on the patent. In other words, technologies under patent protection may be included in standards only if the patent concerned is made available under reasonable and non-discriminatory terms and conditions. If the patent holder does not agree to option (i) or (ii), the ITU/ISO/IEC promptly advise their technical committee to take appropriate action, such as reviewing the standard or draft standard in order to remove the potential conflict, or further examining and clarifying the technical considerations causing the conflict.

82. As regards the term “free of charge” in option (i), the Form explains that the term does not mean that the patent owner waives all of his rights with respect to the essential patent. Rather, it refers to the issue of monetary compensation, that is, the patent holder will not seek any monetary compensation as part of the licensing arrangement, but he is entitled to seek a license agreement that contains other reasonable terms and conditions such as those relating to governing law, field of use, reciprocity, warranties, etc.

83. So long as the patent owner is committed to a reasonable and non-discriminatory licensing terms (option (i) or (ii)), he may impose reciprocity in the sense that the patent owner commits to those licensing terms if a prospective licensee will commit to license its essential patent(s) under the same terms for the implementation of the same standard.

84. In view of improving the transparency in the standard-setting process, each organization has established a patent information database, which is available to the public on the Internet.⁷ Although the formats of the three databases are not identical, in principle, they compile the information contained in submitted Patent Statement and Licensing Declaration Forms. In certain cases, the patent owner voluntarily submits detailed information regarding essential

⁷ ITU data base [<http://www.itu.int/ipr/IPRSearch.aspx?iprtype=PS>]; ISO data base [http://isotc.iso.org/livelink/livelink/fetch/2000/2122/3770791/customview.html?func=ll&objId=3770791&objAction=browse#ISO_Patents_db]; IEC data base [<http://patents.iec.ch/>].

patents, and in other cases, he declares his willingness to grant a RF or RAND license without disclosing the relevant essential patent. According to the ITU-T database, although patentees who chose licensing option (i) or (ii) in the previous paragraph are not obliged to disclose relevant patent numbers, many patentees in practice disclose such information voluntarily.

85. In order to take into account any subsequent development of technology, the Common Patent Policy is also applicable subsequent to the approval of the standards. Therefore, if an essential patent is found after the approval of the standard, the patent statement and licensing declaration mechanism above also apply to such a later-found patent.

86. According to the Common Patent Policy, ITU/ISO/IEC are not in a position to give authoritative or comprehensive information about evidence, validity or scope of patents or similar rights notified to them. Licensing negotiations in accordance with the declared terms are left to the parties, and those organizations do not intervene in disputes that may arise between the parties.

(ii) ETSI

87. The ETSI is a standard setting organization in the field of information and telecommunication technologies. It is a not-for-profit organization officially recognized by the European Commission as a European Standards Organization. With a view to seek a balance between the needs of standardization for public use and the rights of the owners of intellectual property rights (IPRs), ETSI Rules of Procedure contain, in Annex 6 thereof, an Intellectual Property Rights Policy. The ETSI Guide on Intellectual Property Rights has also been established in order to assist the implementation of the IPR Policy.⁸ The ETSI IPR Policy clarifies that the term “IPR” is defined as “any intellectual property right conferred by statute law including applications therefore other than trademarks.” Rights relating to confidential information, trade secrets and the like are excluded from the definition of IPR.

88. In order to identify IPRs in sufficient time to avoid wasting effort on the elaboration of a standard which could be subsequently be blocked by an essential IPR, the IPR Policy states that each member or associate member shall make reasonable endeavors, in particular during the development of a standard where it participates, to inform ETSI of essential IPRs in a timely fashion. In particular, a member submitting a technical proposal for a standard shall, on a *bona fide* basis, draw attention of ETSI to any of his IPRs which might be essential if that proposal were to be adopted. It appears that the obligation to notify essential IPRs applies both during the standard development phase as well as after adoption of the standard. According to the definition, categorization of an IPR as “essential” means that it is not possible on technical grounds to make, sell, lease, otherwise dispose of, repair, use or operate equipment or methods which comply with a standard without infringing that IPR. To determine the technical grounds, normal technical practice and the state of the art generally available at the time of standardization shall be taken into account.

89. The Guide on IPRs explains that the concept of “reasonable endeavors” qualifies the obligation to disclose essential patents. What constitutes “reasonable endeavors” is measured in terms of the knowledge of the representatives of an ETSI member who are involved in standard-setting activities. Members participating in technical bodies that develop the standards should respond at the earliest possible time to the Call for IPRs performed by the

⁸ <http://www.etsi.org/WebSite/AboutETSI/IPRsInETSI/IPRsinETSI.aspx>.

Chairs of such bodies at the beginning of each meeting. The IPR Policy, however, clarifies that there is no obligation on ETSI members to conduct IPR search.

90. In order to inform the essential IPRs, the ETSI *IPR information statement and licensing declaration* form is required to be used together with the *IPR information statement annex* which identifies the specific patents or pending applications by their numbers, filing countries, titles and patent family (optional). The form contains a pre-printed declaration that the signatory is prepared to grant irrevocable licenses under the IPRs on terms and conditions which are in accordance with Clause 6.1 of the ETSI IPR Policy, in respect of the standard concerned, to the extent that the IPRs remain essential. Clause 6.1 of the IPR Policy states that, when an essential IPR is brought to the attention of the ETSI, the Director-General of the ETSI immediately requests the patent owner to give, within three months, an undertaking in writing that it is prepared to grant irrevocable licenses on fair, reasonable and non-discriminatory (FRAND) terms and conditions under such IPR to at least manufacture, sell, lease, or otherwise dispose of equipment so manufactured, repair, use or operate equipment and use methods. Such undertaking may be made subject to the condition that those who seek licenses agree to reciprocate.

91. In cases where an IPR owner informs the ETSI that he is not prepared to license his IPR under the FRAND conditions, detailed procedures are established in order to minimize the risk of IPRs being a potential impediment to implement the standard. The procedures for removing potential conflicts and further clarifying the technical considerations depend on: (i) whether the non-availability of a FRAND license was found prior to the publication of the standard or after the publication of the standard; (ii) whether a viable alternative to the technology under such IPR exists or not; and (iii) whether a party refusing to grant a FRAND license is a member of the ETSI or not.

92. *IPR information statement and licensing declarations* received by the ETSI are made available to the public on the Internet at the ETSI IPR Online Database.⁹

93. Further, the IPR Policy clarifies that the proceedings of the technical bodies are to be regarded as non-confidential, and all information submitted to the technical body shall be treated as if non-confidential and shall be available for public inspection unless: (i) the information is in written or other tangible form; (ii) the information is identified in writing, when submitted, as confidential; and (iii) the information is first submitted to, and accepted by, the Chair of the technical body as confidential.

94. Any violation of the IPR Policy by a member shall be deemed to be a breach of its obligations to the ETSI. The ETSI General Assembly shall have the authority to decide the action to be taken against the member in breach, in accordance with the ETSI Statutes. The Guide on IPRs, however, encourages the resolution of disputes bilaterally in an amicable manner. If the parties so wish, mediation can be offered by other ETSI members and/or the ETSI Secretariat.

[*Ex ante* disclosures of licensing terms]

95. In principle, specific licensing terms and negotiations are commercial issues between the companies and shall not be addressed within the ETSI procedures. However, if the

⁹ <http://webapp.etsi.org/IPR/>.

members participating in the standard-setting know of anticipated licensing terms for a given draft standard before the adoption of the standard, they may be better informed so as to take the best decision both on the basis of technology as well as possible cost implications. On the other hand, discussions as to licensing terms among a group of participants in the standard-setting process may risk violation of the applicable competition law. The Guide on IPRs states that voluntary, unilateral, public, *ex ante* disclosures of licensing terms by licensors of essential IPRs, for the sole purpose of assisting members in making informed (unilateral and independent) decisions in relation to whether solutions best meet the technical objectives, are not prohibited under the ETSI policy.

96. Although *ex ante* disclosures of licensing terms are voluntary, the ETSI acts as a depositary where information on disclosed licensing terms can be found. The collection of links to URLs of licensors who provide *ex ante* disclosure is provided on the ETSI website.¹⁰

[ETSI Guidelines for Antitrust Compliance]

97. Apart from the cases where *ex ante* discussions of licensing terms take place, there may be a risk of anti-competitive behavior during the standard setting, since exchange of information during the standardization process may lead to illegal collusion or illegal exclusion of other non-members (see Chapter VII regarding the competition aspects of standardization). In order to minimize such risk, ETSI provides Guidelines for Antitrust Compliance.¹¹ The Guidelines contains background information on competition law in Europe, implication of competition law for ETSI and its members, guidelines for antitrust compliance, and a short list of “do’s” and “don’ts” for the participants in the standard-setting process.

(iii) ANSI

98. ANSI is an “umbrella” nonprofit organization that coordinates the standards of the United States of America. It accredits the procedures of SSOs which work cooperatively to develop voluntary national consensus standards. In order to be accredited, SSOs are required to be in compliance with the “ANSI Essential Requirements: Due Process Requirements for American National Standards”, Section 3.1 of which contains the ANSI patent policy.¹²

99. According to the ANSI patent policy, an American National Standard (ANS) may be drafted in a manner that includes the use of an essential patent (a patent whose use would be required for compliance with that standard) if it is considered that technical reasons justify this approach. If an ANSI-Accredited Standards Developer (ASD) receives a notice that a proposed or approved ANS may require the use of an essential patent, the ASD seeks from the identified party either:

(a) an assurance in the form of a general disclaimer to the effect that such party does not hold and does not currently intend holding any essential patent claim(s); or

¹⁰ <http://www.etsi.org/WebSite/AboutETSI/IPRsInETSI/Ex-ante.aspx>. As of October 3, 2008, however, no *ex ante* information is available.

¹¹ <http://www.etsi.org/WebSite/AboutETSI/IPRsInETSI/IPRsinETSI.aspx>

¹² <http://publicaa.ansi.org/sites/apdl/Documents/Standards%20Activities/American%20National%20Standards/Procedures,%20Guides,%20and%20Forms/2008%20ANSI%20Essential%20Requirements/2008%20ANSI%20Essential%20Requirements%20031108.pdf>

(b) an assurance that a license to such essential patent claim(s) will be made available to applicants desiring to utilize the license for the purpose of implementing the standard either:

- under reasonable terms and conditions that are demonstrably free of any unfair discrimination, or
- without compensation and under reasonable terms and conditions that are demonstrably free of any unfair discrimination.

100. The patent policy clarifies that neither the ASD nor ANSI is responsible for identifying patents for which a license may be required or for conducting inquiries into the legal validity or scope of those patents. A decision as to compliance with the substantive requirements (for example, “reasonable terms and conditions” and “free of unfair discrimination”) is the exclusive province of the Board of Standards Review (or the ANSI Appeals Board in the case of appeal) if the issue is raised during the approval process or in a petition for withdrawal of approval.

101. Since the ANSI patent policy is an umbrella policy that should be complied with by all ASDs, which operate under different constitutions covering various fields of technology, industries and businesses, the establishment of detailed procedures for implementing the patent policy is left to each ASD. However, the “Guidelines for Implementation of the ANSI Patent Policy” have been prepared in order to assist the understanding and implementation of the ANSI patent policy.¹³ The Guidelines are suggestions, identifying possible procedures that a standards developer may wish to adopt. Any additional or different steps may also be selected for the purpose of effective implementation of the ANSI patent policy.

102. The Guidelines suggest that, in order to encourage early disclosure of essential patents, one or more requests be made to participants during the development of standards for the disclosure of essential patents. Such a request could be made by including it in letter ballots or in requests could be repeated at working group(s) or by a semi-annual notice given to each participant. The Guidelines, however, clarify that participants in the standards development process are not required to conduct a patent search of their own or others’ patent portfolios.

103. The Guidelines also suggest that the ASD makes it clear that any participant in the process, and not only a patent holder, is permitted to identify or disclose essential patents. They state that it is desirable to encourage disclosure of as much information as possible concerning the patent, such as the identity of the patent holder, patent number, information regarding how it may relate to the standard being developed and relevant unexpired foreign patents. Further, the Guidelines encourage disclosure of existing pending US applications, although there may be an issue of confidentiality regarding unpublished applications and uncertainty as to whether the application would mature into a patent and what the scope of the claims in the granted patent would be.

¹³ <http://publicaa.ansi.org/sites/apdl/Documents/Standards%20Activities/American%20National%20Standards/Procedures,%20Guides,%20and%20Forms/Guidelines%20for%20Implementation%20of%20the%20ANSI%20Patent%20Policy%202007.DOC>

104. The Guidelines clarify that the ANSI patent policy applies to the situation where essential patents are discovered subsequent to the adoption of the standard. It also applies to patents issued after the adoption of the standard. The licensing conditions under the patent policy are required to be met also in those situations.

(iv) IEEE Standards Association (IEEE-SA)

105. The IEEE Standards Association (IEEE-SA) develops global industry standards in a broad-range of industries, including power and energy, transportation, biomedical and healthcare, nanotechnology and information technology. The patent policy of IEEE-SA is provided for in Section 6 of the IEEE-SA Standards Board Bylaws. The provisions of the IEEE-SA Standards Board Bylaws are supplemented by the IEEE-SA Standards Board Operational Manual.¹⁴

106. According to the IEEE-SA's patent policy, IEEE standards may be drafted in terms that include the use of essential patent claims. Essential patent claims are defined as any patent claim the use of which is necessary to create a compliant implementation of either mandatory or optional portions of the normative clauses of the (proposed) IEEE standard when, at the time of the (proposed) IEEE standard's approval, there was no commercially and technically feasible non-infringing alternative. If the IEEE receives notice that a (proposed) IEEE standard may require the use of a potentially essential patent claim, the IEEE shall request licensing assurance (a Letter of Assurance) from the patent holder or applicant. The Letter of Assurance should be submitted as soon as reasonably feasible in the standards development process, and shall be submitted prior to the Standards Board's approval of the standard. The submitter of the Letter of Assurance makes reasonable and good faith inquiry, but there is no duty to conduct a patent search. In order for IEEE's patent policy to function efficiently, individuals participating in the standards development process are required to inform the IEEE of the holder of any potential essential patent claims of which they are personally aware.

107. If there is any essential patent claim, a Letter of Assurance shall be either:

(a) a general disclaimer to the effect that the Submitter without conditions will not enforce any present or future essential Patent Claims against any person or entity making, using, selling, offering to sell, importing, distributing or implementing a compliant implementation of the standard; or

(b) a statement that a license for a compliant implementation of the standard will be made available to an unrestricted number of applicants on a worldwide basis, without compensation or under reasonable rates, with reasonable terms and conditions that are demonstrably free of any unfair discrimination.

The assurance is irrevocable once submitted and accepted, and shall apply, at a minimum, from the date of the standard's approval to the date of the standard's withdrawal.

108. Further, the policy includes an *ex-ante* disclosure of licensing term mechanism by stating that the Submitter, at his option, may provide with his assurance any of the following:

¹⁴ <http://standards.ieee.org/resources/index.html#guides>.

(i) a not-to-exceed license fee or rate commitment; (ii) a sample license agreement; or (iii) one or more material license terms.

109. The IEEE-SA's patent policy also addresses the situation where an essential patent the holder of which was committed to the RAND license has been subsequently transferred to a new owner. A question may arise as to whether such a new owner is bound by the RAND license commitment. According to the Bylaws, the Submitter and all affiliates (other than those affiliates excluded in the Letter of Assurance) must not assign or otherwise transfer any rights in any Essential Patent Claim that are the subject of such Letter of Assurance that they hold, control or have the ability to license with the intent of circumventing or negating any of the representations and commitments made in such Letter of Assurance. The submitter of the Letter of Assurance must agree to provide notice of the Letter of Assurance either through a Statement of Encumbrance or by binding any assignee or transferee to the terms of such Letter of Assurance. The Submitter must also agree to require its assignee or transferee to agree to similarly provide such notice and bind its assignee or transferee to agree to provide similar limitation with respect to subsequent assignee or transferee.

110. On the basis of the Letters of Assurance, IEEE-SA Records of IEEE Standards-Related Patents are published on its web site.¹⁵

(v) W3C

111. The W3C Patent Policy governs the handling of patents in the process of producing web standards.¹⁶ Participants in a Working Group where technical discussion on web standards takes place, as well as submitters of any proposal, must agree to the W3C Royalty-Free License requirements for patents found to be "essential" to the Recommendation concerned. The participants are not required to disclose known patents as long as they commit to license those patents in accordance with the W3C Royalty-Free Licensing requirements.

112. A W3C Royalty-Free License is a non-assignable, non-sublicensable license to make, have made, use, sell, have sold, offer to sell, import and distribute and dispose of implementations of the Recommendation that shall be available to all, worldwide, whether or not they are W3C members, and may not be conditioned on payment of royalties, fees or other consideration. The License must extend to all Essential Claims owned or controlled by the licensor. Essential Claims are defined as all claims in any patents or patent application in any jurisdiction in the world that would necessarily be infringed by implementation of the Recommendation. A claim is necessarily infringed only when it is not possible to avoid infringing it because there is no non-infringing alternative for implementing the normative portion of the Recommendation.

113. The Royalty-Free License may be limited to implementations of the Recommendation, and to what is required by the Recommendation. It may be conditioned on a grant of a reciprocal RF license to all essential Claims owned or controlled by the licensee. A reciprocal license may be required to be available to all, and a reciprocal license may itself be conditioned on a further reciprocal license from all. Further, the RF license may be suspended with respect to any licensee when licensor is sued by licensee for infringement of claims essential to implement any W3C Recommendation. The Royalty-Free License may

¹⁵ <http://standards.ieee.org/db/patents/index.html>

¹⁶ <http://www.w3.org/Consortium/Patent-Policy-20040205/>

not impose any further conditions and restrictions on the use of any technology, intellectual property rights or other restrictions on behavior of the licensee, but may include reasonable, customary terms relating to operation or maintenance of the license relationship such as choice of law and dispute settlement.

114. When participants do not agree to the W3C Royalty-Free License requirements, the W3C Patent Policy requires public disclosure of the numbers of patents and patent applications by them based on actual knowledge that the patent contains claims that may be essential. Such a disclosure must be made as soon as practically possible. No portfolio search is required in order to comply with the disclosure requirement. If a W3C member includes claims, which were developed based on information from a W3C Working Group or W3C document, in a patent application, the Member must disclose the existence of such a pending application even if it is unpublished. The disclosure obligation is an ongoing obligation and terminates when the Recommendation is published or when the Working Group terminates.

115. Under certain conditions, a participant to the Working Group may exclude specific patent claims from the W3C Royalty-Free Licensing requirements within a defined time limit. It allows a Working Group to be aware of a possible obstacle and at the same time, allows a patentee to make contribution to the overall efforts.

116. The patent disclosure requirements are regarded as part of a procedure to resolve any potential conflict with the goals of the W3C Patent Policy. Where an essential patent has been disclosed but is not available under the W3C RF License, a Patent Advisory Group will be established, and will suggest a way forward, which may be considering designing around the essential patent, termination of the Working Group or consideration of alternative licensing terms. A list of patents disclosed and excluded during the W3C process are made available on the Internet.¹⁷

(c) Issues Under Consideration

117. While there are some inherent limits to the self-regulation model, such as non-applicability of IPR policies to non-members of SSOs, the IPR policies have been playing an important role in addressing potential tensions between patents and standards from the practical and pragmatic standpoint. In general, SSOs observed that their IPR policies were fairly effective as evidenced by the infrequency of IPR problems associated with their standards.¹⁸ However, a balance that SSOs intend to strike is a very fine one. If a patent policy is too stringent to technology holders, it may slow down standards development, raise costs, and scare away the technology holders from the standardization process. On the other hand, if the policy is too much in favor of the technology holders, wide implementation of standard may be at risk. While practitioners involved in standardization believed that such policies are not “broken”, they are of the view that standards bodies should consider improvements to their IPR policies in a studied and thoughtful way.¹⁹ It appears that some possible issues for improvement relate to the transparency, clarity and certainty of patent

¹⁷ <http://www.w3.org/2004/01/pp-impl/showPatents.php>

¹⁸ ITU Workshop: “ICT Standards and Intellectual Property Rights” (Geneva, 1 July 2008) Meeting Report [http://www.itu.int/dms_pub/itu-t/oth/06/14/T06140000050001PDFE.pdf]

¹⁹ ITU Workshop: “ICT Standards and Intellectual Property Rights” (Geneva, 1 July 2008) Meeting Report [http://www.itu.int/dms_pub/itu-t/oth/06/14/T06140000050001PDFE.pdf]

policies. Ambiguities with respect to the obligations of the participants to the standardization process can trigger serious disputes after the standards are adopted.

Clarification of terms

118. One issue relates to the clarification of the disclosure policy: when, what, by whom and how relevant information is to be disclosed. Another issue includes clarification of terms contained in patent policies, such as “essential patents”, “essential claims”, “RAND license” and “FRAND license”. The definition of “essential patents” or “essential claims” is important, since it defines which patents/claims the participants should disclose during the standardization process and to which patents/claims the licensing commitment under the patent policy applies. In general, initially, it is a patentee (or a patent applicant) who decides whether his patent/claim is potentially essential for the implementation of the standard under development. Many SSOs do not have sufficient resources to determine which patents/claims are essential, and a disclaimer stating that the SSO is responsible for neither identifying nor confirming the essentiality of patents/claims is usually contained in its patent policy. Similar difficulties arise with the definition of RAND or FRAND licensing term. It is generally understood that RAND licenses may be royalty-bearing or may include other reasonable fees, and may include other terms and conditions in addition to royalty which must be also reasonable.²⁰ Furthermore, non-discriminatory signifies that the licensor must not refuse to license different parties who are similarly situated on materially similar terms.²¹ In practice, since the actual licenses are generally negotiated on a bilateral basis between the patentee and each licensee, the licensor and the licensee may not agree whether the offered terms and conditions are in compliance with the patent policy of the SSO. Unless the patent policy states otherwise, in general, such disputes should be settled outside the SSOs between the parties concerned based on the applicable law.

119. On the other hand, a question may be raised whether a uniform definition of RAND or FRAND is desirable for the purpose of effective and efficient setting and implementation of standards. There is a view that, since those terms are not strictly defined, they support different types of negotiations among different parties with different business models to conclude specific terms that are mutually and uniquely suited for each specific situation.²²

120. While objective definitions of those terms may not be easily found, some of the technical terms relating to patent laws could be clarified when they are used in patent policies. A clear distinction may be made, for example, between a “patent” and a patent “claim” or between a “patent” and “a patent application”. The difficulty, however, may be that not all terms are used in identical ways under different national patent laws: they may use different terms for the same concept or use the same term for different concepts.

Ex ante disclosure of licensing terms

121. Many patent policies provide for assurances to be sought from participants in the standardization process to commit to certain licensing terms and conditions, such as RAND or RF, in case they have any essential patents regarding the standard under consideration.

²⁰ Standards Development Patent Policy Manual, American Bar Association, Committee on Technical Standardization Section of Science & Technology Law, Jorge L. Contreras (ed.), p.22.

²¹ Id.

²² SCP/12/3 Rev.2, Annex III, page 31.

However, it may be difficult to define precisely the RAND term in patent policies of the SSOs, and consequently, each participant to the standardization process may have different understanding regarding the RAND term. As one way of reducing the ambiguity of licensing terms, a model that introduces, in the standard setting process, a licensing statement by a patent holder on licensing commitments going beyond the unspecific RAND criteria, for example, the maximum royalty rate the patent holder may charge, has been developed. Such an *ex ante* disclosure of licensing term may facilitate informed decisions by the participants in the standard-setting process, and enables competition based on both technology and price when deciding on a standard. Furthermore, it may avoid disputes over the licensing terms after the standard has been adopted and facilitate rapid implementation of adopted standards.

122. Although there are concerns about compliance with competition law (see Chapter VII(c)(ii) below) and SSOs are generally reluctant to become forums for addressing patent licensing issues, how such an *ex ante* disclosure mechanism could increase the licensing certainties *ex post* has been explored, and some SSOs such as the ETSI and the IEEE-SA have incorporated an *ex ante* mechanism (voluntary and unilateral disclosure of licensing terms and conditions by a patentee) in their patent policies. However, at this point in time, the use of such a mechanism does not seem to be widespread. Since the licensing negotiation normally reflects relative market positions of the licensor and the licensee as well as their relative positioning *vis-à-vis* other competitors and market players, how the *ex ante* disclosure mechanism, which has been introduced rather recently, would be utilized in the market in the future still needs to be seen.

123. In order to bring more transparency and predictability to the overall royalty price for the implementation of standards, some propose a new model (“Industrial Royalty Pie” model).²³ In the telecom environment which is characterized by complex and dynamic standards having broad technical scope and long evolution cycles over many years, it is felt that a mere *ex ante* disclosure of licensing terms at the SSO is not effective, since it is too early for prospective patent owners to put a meaningful price tag on the technology. The Industrial Royalty Pie model therefore combines the *ex ante* process with other measures so that both individual royalty rates are FRAND-compliant and cumulative royalty rates are reasonable. Specifically, a patent owner who makes a FRAND commitment also makes an *ex ante* commitment to a framework in which the maximum aggregate licensing costs are reasonable (“Aggregated Reasonable Terms (ART)”) and his individual royalty claim will not exceed the proportional contribution they make to the patented technology in the standard (“Proportionality (P)”). It is explained that the ART is not a royalty cap and is no more than an individual patent owner’s own understanding or articulation of what a reasonable royalty would be, given all the market conditions.

124. Based on the Industry Royalty Pie model, in April 2008, with respect to IPR licensing relating to 3GPP Long Term Evolution and Service Architecture Evolution Standards (LRE/SAE), eight wireless technology companies agreed, subject to reciprocity, to reasonable, maximum aggregate royalty rates based on the value added by the technology in the end product and to flexible licensing arrangements according to the licensors’ proportional share of all standard essential IPR for the relevant product category.²⁴ The companies agreed

²³ “FRAND Best Practice” presented by Tim Frain at the IPR in ICT Standardization Workshop, November 19, 2008 [http://ec.europa.eu/enterprise/ict/policy/standards/ws08ipr_en.htm]

²⁴ “Wireless Industry Leaders commit to framework for LTE technology IPR Licensing”, NOKIA press release, April 14, 2008 [<http://www.nokia.com/A4136002?newsid=1209094>]

that a reasonable maximum aggregate royalty level would be a single-digit percentage of the sale price for LTE in handsets, and a single-digit dollar amount for notebooks with embedded LTE capabilities.

Prior art identification

125. Another question relating to the effectiveness of patent disclosure is how to identify, at the early stage in the standard-setting process, patent applications and patents which may become essential to the implementation of the standard under discussion, whether right holders are participating in the standardization process or not. The most straightforward way could be to conduct a patent search either individually or collectively by the members of a technical body and share the search results among the members. If the patent search is made collectively, the cost may be shared by the participating members. There are concerns, however, about the conduct of patent searches by participants in standard-setting bodies arising from a punitive damage award made in the case of willful infringement in the United States of America.²⁵ There is a concern that the knowledge acquired by the collective patent search could make the participants liable for punitive treble damages in possible future litigation, although the Federal Circuit recently held that proving willful infringement required at least a showing of objective recklessness.²⁶ This entails two elements of proof: first, the patent owner must prove by clear and convincing evidence that the accused infringer acted despite an objectively high likelihood that its actions constituted infringement of a valid patent; and second, the patent owner must also prove that this risk was either known, or so obvious that it should have been known, to the accused infringer. Further, it is argued that the timing of such patent search is difficult to specify, since the technical scope of the specification often changes during the course of its development. A mechanism for managing disclosures on patents relevant to standards was proposed by a multi-stakeholder group.²⁷

Enforcement of patent policy

126. With regard to the enforceability of the IPR policies, in general, in the case of a failure to comply with the IPR policy of the SSO by the participants of such SSO, such as a failure to submit a patent disclosure statement or a submission of false information, contractual remedies may be sought under the applicable contract law. SSO's may specify consequences of violations of the IPR policy in the policy itself or in any other by-laws that bind the participants, taking into account the potential damages that may be caused by the violation and any adverse effect of such remedies. It is said, however, that most SSOs do not have a formal mechanism to adjudicate disputed issues of fact, and therefore are often reluctant to impose severe sanctions on a participant when there may be different views as to the exact requirements of the IPR policy and the degree to which the participant intentionally failed to

²⁵ In the context of the antitrust law of the United States of America, the Standards Development Organization Advancement Act of 2004 permits standard development organizations (SDOs) to limit the possible antitrust damage exposure to actual, as opposed to treble, damages by filing a notification to the FTC. The Act, however, states that the term SDOs does not include parties participating in the SDOs.

²⁶ In re Seagate Tech., LLC, 497 F.3d 1360 (Fed. Cir. 2007).

²⁷ SCP/12/3 Rev.2, Annex III, page 38.

comply with the policy.²⁸ This may suggest that an informal dispute settlement mechanism could play an important role for the effective enforcement of the IPR policies.

127. Since the IPR policy does not bind non-participants to the standard-setting process, whether a licensing commitments made by the previous patent owner during the standardization process has a legally binding effect on the new patent holder (who did not participate in the standardization) is an interesting question. As stated earlier, the IEEE, for example, provides a provision in the patent policy that requires a patent holder to bind any future transferee(s) to the RAND licensing commitment that the original patent holder had made. In some countries that provide registration of licenses, in order to provide a safeguard for non-exclusive licensees, a non-exclusive license is effective against any subsequent patentee or exclusive licensee once a non-exclusive license has been registered in the patent register. In the United States of America, the Federal Trade Commission (FTC) found that Negotiated Data Solutions LLC (N-Data) violated Section 5 of the FTC Act by engaging in unfair methods of competition and unfair acts or practices regarding its enforcement of patents essential to implement a computer network standard.²⁹ The patents essential to implement the Ethernet standard were first owned by National Semiconductor Corporation (National) which had made a licensing commitment during the standard setting process. The FTC found that N-Data obtained the patents from National, knowing about that prior licensing commitment, and refused to comply with that commitment after the industry became committed to the standard and instead demanded royalties far in excess of that commitment.

Open source licenses and patent policy

128. Standardization as such does not seem to give rise to a conflict with open source software. For example, the LiMo Foundation, which is a consortium in the mobile phone industry set up to deliver an open Linux-based software platform for handsets, has an IPR policy and a licensing model that incorporate open source components.³⁰ However, as increasing co-existence of open source software in standards becomes evident in the market, questions have been raised as to whether there is any potential conflict between SSOs' patent policies embracing RAND or FRAND licensing terms and open source software licensing terms. While the GPLv3 license, for example, includes provisions concerning the exercise of relevant patent rights, not all open source software licenses clarify licensing conditions relating to patents that may be infringed by making, using, selling, etc., the software under the open source license. Given the consequences that the choice of open source software licenses has on the exploitation form of the software, the interplay between the SSOs' patent policies and the open source software licensing commitment may require careful consideration.

V. PATENT POOLS

129. SSOs' self-regulating rules intend to encourage early disclosure of essential patents and declaration of the licensing positions of the patent holders so that the determination of the standards fully takes into account that information in order to minimize the hold-up problem after the standards have been adopted. While the patent holder may declare the licensing

²⁸ Standards Development Patent Policy Manual, American Bar Association, Committee on Technical Standardization Section of Science & Technology Law, Jorge L. Contreras (ed.), p.29.

²⁹ <http://www.ftc.gov/os/caselist/0510094/index.shtm>

³⁰ <http://www.limofoundation.org/en/ipr-policies.html>

position, in general, negotiations regarding licenses are dealt with between the parties concerned outside the SSO's standard-setting procedures, that is, they are left to the market. Each party needs to examine the scope of the patent concerned, evaluate the relevance of the claimed invention to the standard technology, and agree with a royalty rate or any other form of arrangement (for example, a cross license) for use of the essential patent. In cases where a standard includes a number of essential patents owned by a number of different patent holders, the coordination problem becomes apparent. First, each patent holder, even if he owns an essential patent, needs licenses from others in order to implement the standard. Second, other implementers of the standard need to negotiate licensing agreements with each and every essential patent holder and may need to pay royalties, which may accumulate to a substantial amount. Consequently, bilateral negotiations may not be the best solution in terms of the transaction costs involved in the licensing negotiations and accumulated royalties. A patent pool is one of the market-driven mechanisms which can reduce such transaction costs.

130. In the standardization context, a patent pool is formed in order to ensure a fair, reasonable and non-discriminatory way of accessing the patented technology incorporated in the standard. It is an agreement enabling participating patentees to use the pooled patents and to provide a standard license for the pooled patents. The agreement also includes an allocation of a portion of the licensing fees among members of the pool. Patent pools are encountered most often in the case of standards in the fields of digital technology and telecommunication technology, which frequently involve many patents owned by different parties. Table 1 provides examples of patent pools relating to standards.

131. In accordance with the pooling agreement, the owners of essential patents generally grant the administrative body of a patent pool a worldwide, non-exclusive, non-transferable license under all present and future essential patents, with the administrative body having the right to sublicense those essential patents. Patentees may create an independent administrative body (for example, MPEG-LA), or one of the patentees may be entrusted to act as an administrative body (for example, DVD-6C and DVD-3C patent pools). The administrative body typically grants sublicenses under the pooled essential patents, collects royalties, enforces contract rights and distributes to the participating patentees the revenues derived from the sublicenses. Such a patent pool license allows access to the pooled patents on the same terms at fixed rates under a single license to any licensee. In addition, it constantly reviews new patents which merit inclusion in the pool (essential patents but not substitute patents). In order to ensure impartiality, independent experts are often involved in such a review process.

132. The licensing terms and conditions, such as contract term, royalty rate and other conditions, may be different from one pool to the other, while standard-related patent pools share the same objective of access to patented technology in a reasonable and non-discriminatory manner (see Table 1). In order to ensure non-discrimination among licensees, a most-favorable royalty clause is typically included so that no licensee would be charged higher royalty than another. The pool license normally includes any future patents which may be included in the pool. Therefore, the patents included later in the pool do not affect the level of royalty.

133. Some patent pools provide for a licensing policy that obliges licensees to grant-back any essential patent on a fair, reasonable and non-discriminatory basis. This is to prevent an essential patent owner, who has not participated in the pool, from, on the one hand, taking advantage of the patent pool, and, on the other hand, refusing to license his essential patent (which is outside the patent pool agreement) on fair, reasonable and non-discriminatory terms.

Similarly, the MPEG-2 licensing agreement, for example, stipulates that a licensor may instruct the licensing administrator to remove its patents from coverage as to a particular licensee, if that licensee brings a lawsuit or other proceeding for infringement of an MPEG-2 Patent against the licensor and has refused to grant the licensor a license on fair and reasonable terms and conditions under such patents on which the lawsuit is based. The intention of this provision is that, since the MPEG-2 License intends to encourage negotiation and innovation in support of the standard, it is designed to protect companies from being sued for using MPEG-2 but should not be used to protect a licensee so that it can sue others.

134. The royalties collected by the patent pool administrator in each country are shared by the members of the pool under an agreed formula. One way of sharing the royalties is to allocate them in proportion to the share of the number of essential patents owned by a patent holder in a particular country. In some patent pools, a more sophisticated formulation is used, for example, taking into account how often a licensor's "essential" patents are infringed by either manufacture or sale of the licensee's products, the age of the patents and whether the licensor's patents relate to optional or mandatory features of the standard.³¹

135. The patent pools listed in Table 1 allow members of the pool to retain their independent right to grant a non-exclusive license on the pooled patents under the terms and conditions agreeable between the member and its licensee to any third party. Such a mechanism provides flexibilities to both licensors and potential licensees when negotiating licensing terms and conditions, and helps to avoid competition concerns.

Table 1: Examples of Patent Pools

MPEG-2 [Administrator: MPEG LA]	Pool members	21 companies and 1 university
	Licensees	1380
	Essential patents	Over 800
	Licensing terms	<ul style="list-style-type: none"> - Worldwide non-exclusive license under all MPEG-2 Essential Patents in the MPEG-2 Patent Portfolio - Royalty example: US\$2.50 for MPEG-2 decoding and encoding products - Royalties are allocated among pool members based on the share of the number of essential patents in each country - A pool member retains independent rights to grant a non-exclusive license
DVD-3C ³² (DVD Video/ ROM player) [Administrator: Philips]	Pool members	Philips, Sony, Pioneer, LGE
	Licensees	Over 270
	Essential patents	DVD ROM player: 340; DVD Video player: 967
	Licensing terms	<ul style="list-style-type: none"> - Non-exclusive, non-transferable license to manufacture licensed products within the specified territory and to sell or otherwise dispose worldwide of such licensed products so manufactured - Royalty example: US\$6.85 for a regular DVD Video Player - A pool member retains his rights to license its patents

³¹ DVD-6C Business Review Letter from the Department of Justice [<http://www.usdoj.gov/atr/public/busreview/2485.htm>].

³² <http://www.ip.philips.com/> (accessed on September 15, 2008).

		separately
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Table 1 (cont'd.): Examples of Patent Pools

DVD-6C ³³ (DVD Video/ ROM player) [Administrator: Toshiba]	Pool members	Hitachi, Panasonic, Mitsubishi, Samsung, Sanyo, harp, Toshiba, Victor, Warner Bros
	Licensees	---
	Essential patents	DVD ROM: 292; DVD Video: 903
	Licensing terms	<ul style="list-style-type: none"> - Non-exclusive, non-transferable license to make, have made, use, import, offer for sale, sell, and otherwise dispose of licensed products - Royalty example: The greater of (i) 4% of the net selling price or (ii) US\$4.00 per player or, US\$3.00 per player on or after the effective date of the license (maximum US\$8.00) for a DVD Video Player - Royalty allocation takes into account, for example, the age of the patents and whether the patents relate to optional or mandatory features of the standard³⁴ - A pool member retains his rights to license its patents independently
W-CDMA ³⁵ (3G mobile technology) [Administrator: 3G Licensing]	Pool members	12 companies
	Licensees	---
	Essential patents	223 patent families
	Licensing terms	<p>[Joint Licensing Agreement for Terminals]</p> <ul style="list-style-type: none"> - Worldwide, non-exhaustive, non-transferable license - Royalty example: lower of (i) 1.5% of the net selling price per unit with a minimum of US\$1.50 or (ii) US\$3.00 per unit for W-CDMA terminal product (2008) - Royalty exemption recognizing licensee's existing licensing agreements with a specific pool member(s) - A pool member retains his rights to license its patents independently

136. Participation in a patent pool is voluntary at the option of patent holders. Therefore, some owners of essential patents may opt out from participation in a pool if they do not agree with the licensing terms and conditions of the pool, or they may even form another patent pool. One example is a DVD standard, where users of the standard need licenses from two patent pools (DVD-3C and DVD-6C) to implement the standard. Further, Thomson and other companies have their own licensing programs relating to DVDs. This suggests that, while a patent pool reduces costs for licensing activities, it may not alone be able to completely address patent hold-up concerns.

137. Furthermore, in general, coordination and agreements among companies that otherwise compete with each other in the market may raise antitrust concerns. On the one hand, managing patent rights in the standardization context requires certain coordination among the parties and, on the other hand, there are inherent competition concerns derived from such

³³ <http://www.dvd6cla.com/index.html> (accessed on September 15, 2008).

³⁴ Business Review Letter from the US Department of Justice [<http://www.usdoj.gov/atr/public/busreview/2485.htm>].

³⁵ <http://www.3glicensing.com/Index.asp> (accessed on September 15, 2008).

coordination. It is therefore necessary to find a subtle balance between sometimes competing interests of the patents, standards and competition law systems (see VII(c)(iii) below).

138. Recently, the IEEE and Via Licensing Collaboration, a company specialized in the development and administration of patent licensing programs, entered into an agreement to work together to establish patent pools based on IEEE standards.³⁶

VI. LEGISLATIVE MEASURES

139. Broadly stated, measures such as the patent policies of SSOs, cross-licensing and patent pools are contractual solutions among parties designed to increase legal certainty for the sake of efficient and effective implementation of technologies under standards. Naturally, enforcement of those contracts is governed by the applicable law of contracts. The contractual approach has an advantage of providing flexible solutions agreeable by both parties that best fit to the needs under each specific situation, and avoid a rigid “one-size-fits-all” approach. On the other hand, contractual solutions can only bind the parties under the contract, and the negotiation power of the parties concerned could be substantially uneven.

140. Therefore, in view of increasing concerns as to legal certainty and enforceability, the application of legal mechanisms either internal or external to the patent system is another possible avenue which has been looked at. The advantages of these solutions are that they are universal, and also apply to non-participants in the standard-setting process. Opponents of a legislative approach argue, however, that interfering too much in the standard-setting process via legislative measures would have an adverse impact on incentives to investment and innovation, stifling this mainly industry-driven process under which a balanced solution is found through fair competition in the market, and preventing the adoption of the optimal technologies in a standard.

141. With respect to legislative measures internal to the patent system, exclusions from patentable subject matter, and exceptions and limitations to the enforcement of patent rights, have been pointed out as relevant mechanisms. As to the latter, the international legal framework in this respect is provided in the TRIPS Agreement and the Paris Convention. Article 30 of the TRIPS Agreement allows Members to provide exceptions to the exclusive rights conferred, provided that such exceptions do not conflict with the normal exploitation of the patent and do not prejudice the legitimate interests of the patent owner, taking into account the legitimate interests of third parties. Further, Article 31 of the TRIPS Agreement provides that a Member may allow, under the stipulated conditions laid down in that Article, use other than that allowed under Article 30 without authorization of the right holder (so-called “governmental use” and “compulsory licenses”). It is understood that each Member has the right to grant compulsory licenses, and has the freedom to determine the grounds upon which such licenses are granted and what constitutes a national emergency or other extreme urgency in this respect. The Paris Convention, in Article 5, also contains provisions concerning compulsory licenses.

142. Taking into consideration the above international rules, a number of countries provide in their national legislations certain exceptions and limitations to the exclusive patent rights.

³⁶ <http://standards.ieee.org/announcements/patentlicensingprograms.html>

The scope of the exclusive patent right is carefully designed under national patent laws in order to strike a balance between the legitimate interests of right holders and third parties. To the knowledge of the International Bureau, no national legislation includes a specific provision limiting the right conferred by a patent the exploitation of which is essential for the implementation of a standard.³⁷ On the other hand, existing provisions under national laws concerning exceptions and limitations, including a compulsory license provision, may be applicable to essential patents relating to standards in the same manner as to other classes of patents. For example, in some countries where acts done only for experimental purposes or research purposes do not constitute infringement of patents, an essential patent can be used by third parties without the consent of the patent holder for experimental purposes or research purposes. Further, in some countries where prior user's exception is provided, a third party who, in good faith, before the filing date (or priority date) of the application on which the essential patent is granted, was using the patented invention or was making effective and serious preparation for such use, can continue to use the patented invention without the consent of the patent holder.

143. Some have proposed that the mechanism of the so-called "license of right" under the patent law should be explored in order to ensure access to the technologies incorporated in standards at a reasonable cost.³⁸ Many national patent laws provide a mechanism allowing a patentee to voluntarily file a statement with the patent office that he is prepared to allow any person to use the invention as a non-exclusive licensee. Such a statement will be published in the official gazette, and the patentee typically enjoys a reduction of the maintenance fee. Adequate remuneration is to be agreed upon between the parties, or in the absence of such an agreement, a party may request the patent office to establish appropriate terms and conditions. In the standardization context, this means that if essential patents were subject to such a license of right, the patentee would be entitled to remuneration which would be primarily agreed upon between the parties. However, the patentee would not be able to seek injunctive relief. In the United Kingdom, if, in patent infringement proceedings (other than the infringement by importation from a country which is not a Member State of the European Community), the defendant undertakes to take a license on the terms under the license of right, no injunction may be granted against him and the damages must not exceed double the amount which would have been payable by him as licensee if a license on those terms had been granted before the earliest infringement.

VII. COMPETITION LAW ASPECTS

144. With respect to legal mechanisms external to the patent system, competition law, in particular, addresses certain aspects of the problem, such as abuse of a dominant position in fixing license fees. While certain exchange of information and coordination among companies, which are often competitors in the market, may facilitate adoption and implementation of standards, such coordination among competitors often raise competition concerns. The scope of this document is intended to provide neither comprehensive

³⁷ See document SCP/13/3 (Exclusions from Patentable Subject Matter and Exceptions and Limitations to the Rights).

³⁸ "Identification of essential IPR, transparency of licensing and support to innovation" presented by Roger Burt at the IPR in ICT Standardization Workshop, November 19, 2008 [http://ec.europa.eu/enterprise/ict/policy/standards/ws08ipr_en.htm].

descriptions of the interaction between patent law and competition law nor a complete picture regarding the relationship between standards and the competition law. Rather, it focuses on certain competition law elements that may be relevant where an essential technology to implement standards is under patent protection.

(a) Patents and Competition

145. Patent laws intend to promote innovation and consumer welfare by granting a limited exclusive right to a patentee for a limited period and requiring public disclosure of inventions. On the other hand, competition laws serve the same purpose of promoting innovation and consumer welfare by ensuring fair functioning of the market and, in particular, that market entry is not unduly prevented or made difficult. The two systems are complementary in the sense that patent laws aim to prevent the copying or imitation of patented goods and contribute to a fair market behavior, while competition laws may limit patent rights in that patent holders may be prevented from abusing their rights. A balance has thus to be found between competition policy and patent rights, and this balance must achieve the goal of preventing abuses of patent rights, without annulling the reward provided by the patent system when patent rights are appropriately used.

146. A patent does not automatically confer market power upon the patentee. There is often a substitute or alternative technology available, and above all, complementary assets are required to be in a position to exercise market power. Even if a patent allows a patentee to obtain a monopoly position, in principle, acquiring a monopoly position by lawful means does not constitute the violation of a competition law. However, if competition is distorted by an abusive behavior by a patentee dominating a market or anti-competitive practices that tend to lead to such a dominant position, competition law would be applied to restore fair competition in the market. Similarly, patent licensing agreements have competitive elements in the sense that they promote efficient transfer of technology by integrating a licensed technology to the licensee's complimentary assets. Certain limitations in licensing agreements, such as territorial limitations or limitations as to field of use, may be pro-competitive under certain circumstances since such limitations may allow both licensor and licensee to exploit the patented technology as efficiently and effectively as possible. However, a competition law concern may arise if a licensing agreement contains restraints that adversely affect competition among entities that would have been competitors in the relevant market in the absence of the license. For example, if a licensing agreement that divides a market between competitors who would otherwise have competed each other adversely affects competition, it may be contrary to competition law requirements.

147. While the principles of competition law are applicable in a similar manner to conduct involving intellectual property, differences between the characteristics of intellectual property and of other forms of property requires care in the application of competition law to conduct involving intellectual property rights.³⁹ Those differences include: the very "intellectual" nature of such rights; the subject matter of intellectual property rights is often easy to copy, the marginal costs of using intellectual property are low compared with the cost of creating it, the boundaries of intellectual property rights are often uncertain and difficult to identify both for the right holder and competitors, and the value of intellectual property rights depends on what complementary assets need to be held. In view of such complexity, some authorities

³⁹ "Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition", U.S. Department of Justice and the Federal Trade Commission, April 2007, p.4.

publish Guidelines to clarify the application of competition law to activities involving intellectual property.⁴⁰

(b) Standards and Competition

148. Collaborative standard-setting activities, if properly conducted, may have competitive advantages to society at large. Before a standard is adopted, various companies compete to develop the best technology so that it can be incorporated in the standard. Once a standard is adopted, although there may be less incentive among competitors to develop technologies alternative to the standard, there will be continuous competition among them to develop an added value on the common platform of the standardized technology. Therefore, standard setting activities by SSOs do not *per se* appear to be prohibited by competition law.

149. However, if a standard-setting process is manipulated or disguised so that the participants, who are often competitors, could gain unfair competitive advantages *vis-à-vis* other competitors, such a process is likely to fall under the scrutiny of a competition authority.⁴¹

(c) Intersection of Patents, Standards and Competition

150. When technologies under standards are protected by patents, some specific competition concerns may arise. Once a standard has been adopted covering a technology under patent protection, a patentee may be in a position to demand higher royalties or other unreasonable terms and conditions for licensing his technology to the implementers of such a standard in view of the absence of alternative technology. In order to avoid such a patent hold-up situation, various measures have been suggested, as described in Chapters IV to VI of this document. Those measures need to be taken in compliance with the applicable competition law. In the context of competition law, one should distinguish the licensing terms a patent holder could obtain based on the merits of its technology and the terms that it could obtain because its technology was included in the standard.⁴²

151. With respect to the patent policies of SSOs, two issues may be particularly relevant to competition law, namely, non-disclosure of essential patents and disclosure of licensing terms and conditions during the standard-setting process. Activities relating to patent pools may have consequences that impinge on competition law.

⁴⁰ For example, “Antitrust Guidelines for the Licensing of Intellectual Property” (<http://www.ftc.gov/bc/0558.pdf>) by the U.S. Department of Justice and the Federal Trade Commission, “Guidelines on the application of Article 81 of the EC Treaty to technology transfer agreements” (<http://ec.europa.eu/comm/competition/antitrust/legislation/transfer.html>) and “Guidelines on the applicability of Article 81 to horizontal co-operation agreements” (<http://ec.europa.eu/comm/competition/antitrust/legislation/horizontal.html>) by the European Commission.

⁴¹ The guidelines on the application of competition law to standardization agreements in Europe are found in Section 6 of the “Guidelines on the applicability of Article 81 to horizontal co-operation agreements”.

⁴² “Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition”, U.S. Department of Justice and the Federal Trade Commission, April 2007, p.39.

(i) Non-disclosure of Essential Patents

152. In order to minimize the risk of a patent hold-up, many SSOs' patent policies require participants in the standardization process to disclose patents (and patent applications) which are essential for implementation of standards. A competition law question may arise if a participant in a standardization process engages, for example, in deceptive conduct regarding the existence of patents during the standard-setting process, and later alleges that implementation of the standard infringes his patent and requires a payment of royalties that go beyond the level set in the SSO's patent policy using a monopoly power acquired through the deceptive conduct.

153. In the United States of America, the Federal Trade Commission (FTC) has alleged violation of section 5 of the Federal Trade Commission Act in three cases involving non-disclosure of patents during the standardization process in different factual settings.⁴³ In *In re Rambus*, the FTC determined that Rambus had acquired monopoly power through deceptive, exclusionary conduct in connection with its participation in the standardization process. The Commission found that Rambus misled SSO members by fostering the belief that Rambus neither had, nor was seeking, relevant patents that would be enforced against the implementation of the standard concerned, such misleading conduct contributed significantly to the selection of standard technology, and the selection contributed significantly to Rambus's acquisition of monopoly power. The FTC also found that the switching costs locked the industry in the standard and made the Rambus's monopoly power durable. The FTC's decision, however, was later reversed and remanded by the US Court of Appeals for the District of Columbia Circuit (CADDC), which held that the FTC failed to sustain its allegation of monopolization and expressed serious concerns about the sufficiency of the evidence in connection with the SSO's patent disclosure policy.⁴⁴ On November 24, 2008, the FTC filed a petition for certiorari with the U.S. Supreme Court seeking review of the decision of the CADDC.

(ii) *Ex Ante* Disclosure of Licensing Terms

154. An *ex ante* disclosure of licensing term may facilitate informed decisions by participants in the standard-setting process, and enables competition based on both technology and price when deciding on a standard. Further, it may avoid disputes over licensing terms after a standard has been adopted and facilitate the rapid implementation of adopted standards. However, joint *ex ante* licensing negotiations may raise competition law concerns under certain circumstances, considering them as the exercise of market power by a group of market players having horizontal and vertical relationship, for example, where an *ex ante* licensing negotiation is used to fix a price of downstream products. Another case may occur where participants with collective market power undertake a boycott, as a group, so as to extort unreasonably low licensing fees from a patent holder, particularly where the patent holder's market power is not enhanced by the adoption of the patented technology under the standard.⁴⁵

⁴³ *In re Dell*, 121 F.T.C. 616, 616-18(1996) (No. C-3658); *In Re Rambus, Inc*, No. 9302 (F.T.C. 2002); and *In re Union Oil Co of Cal.*, No. 9305 (F.T.C. March 4, 2003).

⁴⁴ *Rambus Inc. v. FTC*, No. 07-1086, No.07-1124 (D.C. Cir. April 22, 2008).

⁴⁵ "Standard-Setting, Competition Law and the Ex Ante Debate", presented by Gil Ohana, ETSI SOS Interoperability III Meeting, February 21, 2006.

155. While careful consideration of compatibility with competition law may be required, it appears that competition authorities do not categorically deny all *ex ante* licensing negotiations before the adoption of a standard. Paragraph 225 of the “Guidelines on the application of Article 81 of the EC Treaty to technology transfer agreements“ states that, in connection with patent pools, undertakings setting up a technology pool and any supporting industrial standard are “normally free to negotiate and fix royalties for the technology package and each technology’s share of the royalties either before or after the standard is set”. It acknowledges that “such agreement is inherent in the establishment of the standard or pool and cannot in itself be considered restrictive of competition and may in certain circumstances lead to more efficient outcomes”. At the same time, the Guidelines also state that “licensees must remain free to determine the price of products produced under the license”. Further, the European Commissioner for Competition Policy stated in his speech that *ex ante* disclosure may help those involved to make a properly informed decision and that competition law should not stand in the way.⁴⁶

156. Similarly, the Competition Agencies in the United States of America recognize that joint *ex ante* activities to establish licensing terms as part of the standard-setting process will not warrant *per se* condemnation under the Antitrust law, although the Agencies take no position as to whether SSOs should engage in joint *ex ante* discussions of licensing terms.⁴⁷ Because of the strong potential for pro-competitive benefits, the Agencies will evaluate joint *ex ante* activities to establish licensing terms under the rules of reason. Consequently, generally, a patent holder’s voluntary and unilateral disclosure of its licensing terms, as well as bilateral *ex ante* licensing negotiations between an individual SSO member and a patent holder outside the auspices of the SSO, are unlikely to require antitrust scrutiny.

(iii) Patent Pools

157. Patent pools may have a number of pro-competitive aspects if they are handled properly. For example, they may promote licensing efficiency by exploiting economies of scale, clearing blocking positions and integrating complementary capacities of the pool members.⁴⁸ However, since a patent pool inherently involves horizontal coordination among the members of the pool, if it is not properly administered, it may lead to reduced competition in the market. For example, competitors may coordinate and restrict a downstream price and outputs. In the case of pools that consist of substitute technologies, they could amount to a price fixing cartel in the absence of competition among substitute technologies. In addition, where a pool contains standardized technology, it may discourage R&D and innovation if the terms and conditions of the pool are set in such a way as to discourage licensors from making further investment or to discourage licensees from developing alternative technologies. Further, patent pools may have the potential power to exclude third parties’ technologies from the market.

⁴⁶ Neelie Kroes, European Commissioner for Competition Policy, “Being open about standards”, OpenForum Europe Breakfast Seminar, Brussels, June 10, 2008 [<http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/08/317>].

⁴⁷ “Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition”, U.S. Department of Justice and the Federal Trade Commission, April 2007, p.53-56.

⁴⁸ “Antitrust Guidelines for the Licensing of Intellectual Property”, U.S. Department of Justice and the Federal Trade Commission, April 6, 1995, p.29.

158. The competition authorities of the United States of America and the European Commission have provided substantial guidelines with respect to the analysis used to evaluate potential competition issues associated with patent pools. According to those guidelines, there are a number of common denominators for such an evaluation. First, a competition risk depends on the relationship between the pooled technologies and their relationship with technologies outside the pool. In general, the inclusion of substitute technologies is more likely to harm competition than a pool of complementary technologies.⁴⁹ If all pooled patents are essential, that is, there are no substitutes inside or outside the pool and the technology in question is necessary for the implementation of the standard, those patents are necessarily complements. Where non-essential but complementary patents are included in a patent pool, there is a potential risk of excluding third party technologies, since a potential licensee will have little incentive to enter into another licensing agreement if the patent pool license already covers a substitute technology. Further, the inclusion of non-essential patents in the pool may force licensees to pay for technologies that they do not need.⁵⁰ Continuous review of the pooled patents by an independent reviewer, that is, including new essential patents and excluding patents which have become non-essential overtime, would ensure that only essential patents are included in the pool.

159. Second, it appears that the stronger the market position of the pool, the greater the competition risk. According to the European Guidelines,⁵¹ one of the main principles is that pools that hold a strong position on the market should be open and non-discriminatory. Where the pool has a dominant position on the market, royalties and other licensing terms should be fair and non-discriminatory and licenses should be non-exclusive. This, however, is understood in general to mean that imposing different royalties on different licensees is not necessarily anti-competitive. Further, in order to limit a risk of exclusion of third party technologies and ensure that the pool does not limit the innovation and competing technologies, licensors and licensees must be free to develop competing products and standards and must also be free to grant and obtain licenses outside the pool. The US Antitrust Guidelines for the Licensing of Intellectual Property state that, in general, exclusion from a pooling among competing technologies is unlikely to have anticompetitive effects unless (1) excluded firms cannot effectively compete in the relevant market for the good incorporating the licensed technologies, and (2) the pool participants collectively possess market power in the relevant market. The US Antitrust authorities consider that determining the competitive significance of the exclusive nature of licenses granted to the pool, as well as of the lack of opportunities to conclude independent licensing outside the pool, depend on the specific facts of the case.⁵²

160. Third, an obligation that pool licensees grant back their patents shall be in line with competition policies. The European guidelines state that grant-back obligations should be non-exclusive and be limited to developments that are essential or important to the use of the pooled technology. This would allow the pool to feed on and benefit from improvements to

⁴⁹ “Guidelines on the application of Article 81 of the EC Treaty to technology transfer agreements (2004/C 101/02)”, European Commission Notice, paragraph 216.

⁵⁰ “Guidelines on the application of Article 81 of the EC Treaty to technology transfer agreements (2004/C 101/02)”, European Commission Notice.

⁵¹ “Guidelines on the application of Article 81 of the EC Treaty to technology transfer agreements (2004/C 101/02)”, European Commission Notice.

⁵² “Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition”, U.S. Department of Justice and the Federal Trade Commission, April 2007, p.80.

the pooled technology. The US Antitrust Guidelines for the Licensing of Intellectual Property state that an important factor in the analysis of grant-back is whether the licensor has market power in the relevant technology or innovation market.⁵³ If the antitrust authorities determine that a particular grant-back provision is likely to reduce significantly the incentive of licensees to invest in improving the licensed technology, the authorities will consider the extent to which the grant-back provision has offsetting pro-competitive effects, such as (1) promoting dissemination of licensee's improvements to the licensed technology, (2) increasing the licensors' incentives to disseminate the licensed technology, (3) increasing competition and output in a relevant technology or innovation market, or (4) increasing licensors' incentive to innovate in the first place. The patent pool licenses reviewed by, and subsequently accepted by, the Department of Justice contain grant-back provisions which are limited to essential patents in the pools and are non-exclusive.⁵⁴

161. Fourth, institutional arrangement of the pools, for example, organization and operation of the pools, are also an important factor in competition law analysis. For instance, due account should be taken by pool members so that their access to each others' sensitive proprietary information, for example, pricing and output data, would not facilitate collusion. Several safeguard mechanisms have been taken by existing patent pools. Those mechanisms include hiring an independent expert or licensing administrator, which is recognized by both the European and US authorities.⁵⁵ Furthermore, whether participation in the pool is open or closed, the extent of the involvement of independent experts, and measures taken to ensure the independence of those experts, may well be taken into consideration in the analysis by competition authorities.

VIII. SETTLEMENT OF DISPUTES

162. Where a private dispute arises, one way of settling such a dispute is litigation, that is, by submitting a case to a competent court. However, court litigation, in particular litigation at the international level, involves a multitude of procedures in different jurisdictions with the risk of inconsistent outcomes. Mediation, arbitration or other alternative dispute resolution (ADR) procedures allow parties to sidestep such issues and resolve private disputes in, if well managed, a simpler and more cost-effective manner. ADR is appropriate for many intellectual property disputes, particularly between parties from different jurisdictions.

163. ADR offers several advantages. For example: (i) the parties can agree to resolve a dispute in a single procedure; (ii) the parties have greater control over the settlement process, such as selecting a mediator or arbitrator; (iii) ADR may avoid any home court advantage for one party in terms of language and law; and (iv) the parties can agree to keep the proceedings and results confidential. Unlike court decisions, arbitral awards are generally final and not subject to appeal. The United Nations Convention for the Recognition and Enforcement of

⁵³ "Antitrust Guidelines for the Licensing of Intellectual Property", U.S. Department of Justice and the Federal Trade Commission, April 6, 1995, p.30.

⁵⁴ MPEG-2 Business Review Letter; 3C-DVD Business Review Letter; 6C-DVD Business Review Letter.

⁵⁵ 6C-DVD Business Review Letter; "Guidelines on the application of Article 81 of the EC Treaty to technology transfer agreements (2004/C 101/02)", European Commission Notice, paragraph 234.

Foreign Arbitral Awards of 1958 (New York Convention) generally provides for the recognition of arbitral awards on a par with domestic court judgments, without review on the merits, thus facilitating the enforceability of such awards internationally.

164. In connection with standardization activities, there may be a number of potential situations where any disputes over related patents may arise. For example, there may be potential disputes on a number of issues that relate to compatibility with an IPR policy of an SSO, such as:

(i) where the patentee's compliance with the disclosure requirement under the IPR policy is contested because he did not, for example, make "reasonable endeavors" to disclose or provide information "on a best effort basis";

(ii) where the essentiality of a patent to the implementation of a standard cannot be agreed among parties due to, for example, different interpretation of claims;

(iii) where the validity of a disclosed patent is questioned;

(iv) where disputes arise as to whether a patentee provides a license in accordance with commitments provided for in the IPR policy (for example, RAND terms and conditions and non-discrimination requirement).

165. Furthermore, in relation to patent pools, there are also some potential issues that may raise disputes, such as:

(i) the validity and essentiality (if a patent pool includes only essential patents) of a patent;

(ii) compliance with a license concluded between the pool administrator and a licensee (for example, a grant-back clause and a reciprocity clause);

(iii) the allocation of royalties among pool members.

166. In general, SSOs are reluctant to be actively involved in verifying the validity of disclosed patents, evaluating the relevance and essentiality of those patents and assessing compliance with the declared licensing terms and conditions. In consequence, in the event that a dispute arises, the parties concerned may need to settle the dispute among themselves. There may also be potential cases where a participant in the standard-setting process does not agree with the decision taken by the SSO (for example, where the SSO's sanction against non-compliance with its IPR policy is contested by an affected party).

167. According to the European competition authority, the dispute resolution mechanism foreseen in the instruments setting up the pool is relevant to the consideration of its compliance with the competition law. It is stated that the more dispute settlements are entrusted to bodies or persons that are independent of the pool and the members thereof, the more likely the dispute resolution will operate in a neutral way.⁵⁶

⁵⁶ "Guidelines on the application of Article 81 of the EC Treaty to technology transfer agreements (2004/C 101/02)", European Commission Notice, paragraph 235

168. The WIPO Arbitration and Mediation Center offers ADR options for the resolution of commercial disputes between private parties.⁵⁷ The arbitration, mediation and expert determination procedures offered by the Center are particularly suited to cross-border dispute settlement. For example, the Center assists parties in the selection of mediators, arbitrators and experts from the Center's database of over 1000 neutrals with experience in dispute resolution and specialized knowledge in intellectual property disputes. Further, the WIPO Electronic Case Facility (WIPO ECAF) allows for secure filing, storing and retrieval of case-related submissions in a web-based electronic docket, by parties, neutral(s) and the Center from anywhere in the world.

169. An Expert Determination is particularly suitable where it is necessary to determine issues of a technical or scientific nature. For example, disputes relating to the interpretation of claims, the extent of the rights covered by a license or the valuation of IP assets and establishment of royalty rates may be settled through an expert determination. Alternatively, such technical opinions by an expert could be sought in advance by the parties in order to avoid any "disputes" arising in the future. The expert's involvement is based on a contract between the parties, and the parties have autonomy to decide whether the expert's determination should be binding or have effect as a recommendation, and whether it should be followed by mediation and/or arbitration.

IX. TECHNICAL AND PATENT INFORMATION AVAILABLE UNDER THE PATENT SYSTEM AND THE STANDARDIZATION SYSTEM

129. The patent system seeks to encourage innovation by granting a limited exclusive right, and at the same time, to promote the diffusion of technology through mandatory and complete disclosure of patented inventions. Patent information, however, has an aspect of legal information as well. Information concerning the legal status of the right (whether a patent has been granted, maintained or lapsed) and the ownership of the right (who owns the right and whether the ownership has been changed) are made available to the public by patent offices, increasingly through the Internet. In some countries, information concerning licensing agreements is, or may voluntarily be, recorded with a patent office, and at least part of such information is laid open to the public.⁵⁸

170. With respect to a standardization system, during the process toward an adoption of a standard, a variety of technical information is disclosed by participants with a view to adopting the best technical options for the standard. Where the patent policy of an SSO requires patent disclosure, depending on the policy, specific information about disclosed patents, such as patent numbers and patent families, is often published on the Internet. A specification of the adopted standard is published for the wide implementation of the standard by implementers.

171. Consequently, there seems to be an interaction between the patent information generated and published by the patent system and the information generated and published by the standardization system.

⁵⁷ <http://www.wipo.int/amc/en/>

⁵⁸ For further information regarding the dissemination of patent information, see document SCP/13/4.

172. From the viewpoint of the patent system, information disclosed during the standardization process may be prior art information in the patent law sense. Generally speaking, patents cannot validly be granted on inventions that already exist in, or that are obvious from, the state of the relevant art (prior art). Although the definition of prior art may be different from one country to another, the information disclosed and “made available to the public” during the standardization process may become prior art, and thus become relevant to the determination of the patentability of subsequent inventions. Without doubt, appropriate consideration by patent offices of prior art information generated during the standardization process would help to ensure that patents are granted only where inventions meet the patentability criteria under the law, and thus ensures the quality of granted patents. At the same time, participants in the standardization process should be able to rely on the validity of the granted patents to a greater extent. Against this backdrop, the Global Standards Collaboration (GSC) adopted, at its meeting in 2007, Resolution DSC-12/23, which resolved that the participating standard-setting organizations should be encouraged to cooperate with relevant patent offices to provide access to technical information for use by those offices.⁵⁹

173. Such technical information regarding both adopted standards and draft standards under discussion, however, is not easily accessible and immediately usable by patent offices at the international level. For example, the definition of prior art is not the same under all national patent laws. Although many national laws provide a definition using the words such as “everything made available to the public” before the filing date (or where applicable, priority date),⁶⁰ the practical interpretation of words such as “availability” and “public” may be slightly different under national patent laws.⁶¹ Consequently, information disclosed by an SSO may constitute prior art in one country but not in another. Further, while the ETSI’s IPR Policy clarifies that, in principle, proceedings of the technical bodies is to be regarded as non-confidential and all information submitted to the technical body is to be treated as if non-confidential and made available for public inspection, not all SSOs have an explicit rule regarding the open or confidential nature of the information submitted during its standardization process. Subsequently, it may not always be clear for patent offices whether such information constitutes prior art.

174. In the case where information can be considered as publicly available prior art, a clearly identified publication date of such information is particularly important for the patent law purposes. Further, from a practical aspect, in order to use standard-related information effectively for patent search and examination purposes, the technical information disclosed during the standardization process may need to be classified in accordance with a patent classification system such as the International Patent Classification (IPC), although this is a common issue for any non-patent literature (NPL) documents.

175. From the viewpoint of the standardization system, patent information available from patent offices may increase the transparency of the standardization process. While many SSOs provide, on their websites, information regarding patents which may be essential for the implementation of standards, such information is generally based on patent statements

⁵⁹ Resolution GSC-12/23: Cooperation with Patent and Trademark Offices (July 13, 2007) [<http://www.itu.int/oth/T2101000004/en>].

⁶⁰ See document SCP/12/3 Rev.2, Annex II(1).

⁶¹ See document SCP/INF/6/2, which summarizes the answers received from the member States to the questionnaire on the definition of prior art, including the meaning of “availability” of information to the “public”.

submitted by the patentees, and is thus static information. More dynamic, up-to-date information regarding the status of each patent is found in the register of the relevant patent office. However, while the information in the register is made available to the public inspection, only a limited number of offices provide on-line access to such information. In sum, it appears that improving the accessibility of public information generated and published by the patent system and the standard system would lead to a win-win situation for both systems.

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