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WORLD PATENT SYSTEM CIRCA 20XX, A.D *

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In 1776 - the year of our Declaration of Independence - the philosopher/economist Adam Smith taught us that the wealth of any nation rested on three pillars: Labor, Capital and Natural Resources n1 Our generation has added a fourth pillar - Intellectual Property in all of its forms. Patents protect new technology. Copyrights protect literary and artistic works as well as computer software. Trademarks assure orderly commercial development and consumer protection. As we move into the twenty-first century - a century characterized in a high-level Japanese Commission Report as the "Era of Intellectual Creation n2 - the efficient protection of intellectual property will assume an entirely new dimension of importance. To underline the transition to a "knowledge-is-wealth" society, Professor Lester C. Thoreau, writing in the Harvard Business Review, noted that "for more than a century, the world's wealthiest human being has been associated with oil; now he is a knowledge worker. n3

[*530] And, in the global economy that will define the twenty-first century, an effective global system of intellectual property rights will be critically needed. Although that principle will apply to all forms of intellectual property, the most critical task - and in many ways the most challenging - will be to establish a truly global or world patent system, one that will serve the needs of multinational research-based industries as well as small and independent inventors at a cost that will promote, not hinder the development of inventions. And to be accepted, such a system must provide rich dividends not only to the leading developed countries but also to the developing nations and those previously socialist countries that are well on their way to establishing market-based economies.

There is a debilitating redundancy built into the current national/regional patent search, examination and enforcement systems. With respect to any important invention, highly skilled patent examiners around the world - all of whom are scientists or engineers and many of whom in addition, particularly in the United States, have legal training - analyze the same patent application, search the same prior art, and perform the same examination before granting virtually identical patents in their respective jurisdictions n4 Once granted, a patent must be enforced individually in each individual jurisdiction. This unnecessary redundancy drives up the costs of obtaining and enforcing worldwide patent protection to a level that can only be afforded by the largest multinational corporations. The senior patent counsel of one of the world's major researched-based pharmaceutical companies estimates, for example, that it currently costs between $ 750,000 and $ 1,000,000 to obtain comprehensive worldwide patent protection for an important chemical compound, and that figure is growing at a rate of 10% each year n5 The costly duplication of efforts also adversely impacts the governments themselves, many of which are looking for ways to reduce the costs associated with patent protection within fixed or in many cases reduced resources.

In this article we will (1) trace the successful efforts of the past two or three decades to move from purely national patent systems to

[*531] multinational regional systems, (2) outline a vision of what an efficient and effective World Patent System might look like n6 (3) identify the issues and challenges to be resolved on the way to a global or World Patent System, and (4) describe the steps now being taken in Japan, Europe and the United States to move beyond the current national and regional patent systems.

For centuries, civilizations have utilized intellectual property protection as a reward to encourage creativity in technological innovation n7 One hundred and seventy-nine nations have created incentives to inventors in the form of exclusive patent rights for technological developments. In return for those rights, governments require inventors to fully disclose their inventions so that they can be exploited by the public after the patent term.

The eligibility for and the scope of patents are determined by the nations granting the patents, and patent rights are limited to the territory under the governing authority's jurisdiction. Due to the territorial nature of patent rights, protection varies in a number of important ways: acquisition, maintenance, validity, scope, enforcement and patent term.

Current multilateral treaty regimes include both regional agreements and broad- based multinational agreements. The World Intellectual Property Organization ("WIPO") administers the two major multinational agreements in the area of patent protection: the Paris Convention for the Protection of Industrial Property ("Paris Convention") and the Patent Cooperation Treaty ("PCT") n8 These treaties

[*532] provide a context within which multinational patent protection agreements operate.

The precursor of all modern-day multinational protection for intellectual property is the Paris Convention. The treaty was drafted in 1880 and became effective in 1884. Prior to the Paris Convention, inventors had to submit patent applications simultaneously in all the countries where protection was desired. Failure to do so could preclude patent protection in all but one country, with the first application destroying the "novelty" of the invention for subsequent applications. In addition, inventors had to comply with often radically different procedural and substantive requirements to obtain patent protection. This lack of adequate protection for foreign inventors became apparent during the international exhibition of inventions in 1873 in Vienna; inventors refused to participate for fear of losing patentability of their inventions n9

This experience revealed the need for at least a minimum multinational patent protection framework. After various congresses in Vienna and elsewhere, eleven countries adopted the Paris Convention n10 As suggested by its full name, the Paris Convention covers industrial property, namely, patents, trademarks, trade names, industrialdesigns, and unfair competition. Since its inception, the Paris Convention has been revised six times, with the most recent major revision being agreed to in Stockholm in 1967. The Paris Convention is in force among 144 member states, including all of the developed nations and most of the developing nations n11

The Paris Convention established the fundamental principles of "national treatment," "right of priority" and "special agreements," that have been incorporated in all subsequent multinational patent agreements. The principle of "national treatment" requires member states to accord nationals of other member states the same advantages under their

[*533] domestic patent laws as they accord to their nationals. In other words, a national of one member country enjoys the same rights in every member country of the Paris Convention

[*534] as nationals of the country in which he or she files a patent application. However, nationals seeking patent protection in a member country must comply with the domestic laws of the member country from which they seek patent protection.

Article 4 of the Paris Convention provides for the "right of priority." This entitles a patent applicant of one member country to a period of twelve months after the initial patent application to apply for protection in all of the other member countries. Within this one year period, nationals of member countries are further entitled to tie subsequent applications back to the earliest filing date. This provision offers great practical advantages to applicants desiring multinational patent protection. It avoids intervening prior art which would otherwise prevent a patent and serves to overcome the novelty requirement, and it allows applicants time to assess the economic viability of their inventions and determine where they desire patent protection.

In addition, Article 19 of the Paris Convention sets the stage for member nations to enter into "special agreements," forging stronger cooperation in patent protection. These "special agreements" may be bilateral or multilateral, but they must not contravene the other provisions of the Paris Convention. All subsequent multinational and regional patent protection schemes are derived from this provision and are regarded as "special agreements." By structuring a multinational patent protection system under this provision of the Paris Convention, these regional and multinational patent efforts must, at the minimum, provide for national treatment and the right of priority.

The Paris Convention eliminated the major roadblocks that precluded cross-border patent protection and allowed inventors to exploit their inventions internationally. However, the Paris Convention is rather rudimentary in providing inventors with any uniform standard of substantive patent rights. The Paris Convention does not define patentable subject matter, prescribe patent term, provide meaningful limitations to compulsory licenses or guide patent claim interpretation and enforcement. It relegates those substantive issues to the discretion of each member country. In short, it provides an important entry for inventors to journey down the path of multinational patent protection without providing the necessary accommodations.

Although the concept of the Paris Convention was quite progressive in the late nineteenth century and represented a significant step towards multinational patent protection, its principal limitation, when viewed with today's hindsight, was in failing to provide greater integration of rights. Despite this deficiency, the Paris Convention provided the first crucial step towards establishing international agreements and standards of patent protection and eventually spawned the World Intellectual Property Organization ("WIPO"), some eighty years later, leading directly to important harmonization efforts and other multinational regional agreements.

On July 14, 1967, what had been the secretariat of the Paris Convention - the Bureaux Internationalaux Reunis pour la Protection de la Propri t Intellectuelle ("BIRPI") - became a specialized agency of the United Nations under the name of the World Intellectual Property Organization n12 with a sharply defined and straight-forward mission: to promote the protection of intellectual property throughout the world.

Since its inception, the WIPO has coordinated basic activities established by the Paris Convention, promoted intellectual property rights protection worldwide, encouraged international patent harmonization and served as an important source of guidance to the international patent community, especially to developing countries n13 In its effort to promote international patent harmonization, the WIPO is quite naturally the worldwide forum for discussions of international patent matters.

Currently there are 197 member states of the WIPO n14

In many ways, the WIPO is one of the most effective and well managed agencies of the United Nations. In addition to raising the level of protection for intellectual property generally, the WIPO has played a vital role in helping countries set up effective intellectual property regimes. Since its beginning, more than 55,000 persons from 125 countries have participated in training courses organized by the WIPO.

Traditional patent systems require applicants to file applications in each country for which patent protection is sought. The Paris

[*535] Convention allowed applicants to secure an early application date and thus avoid intervening prior art; however, under the Paris Convention, applicants must still meet the varied national laws of each country. This, in turn, requires applicants to expend enormous resources for translations and local attorney fees in order to file duplicate patent applications in all the countries in which patent protection is sought. To make matters worse, the long substantive examination backlogs in many countries require applicants to submit all the necessary applications in various countries without knowing the likelihood of success of his or her initial application.

In the late 1960s, the United States took the lead role in creating a new multilateral patent treaty to minimize duplicative patent application and examinations worldwide. This effort resulted in the Washington Treaty of 1970, commonly referred to as the Patent Cooperation Treaty or "PCT." This treaty constituted an important step towards rationalizing the filing of patent applications worldwide. The PCT entered into force on January 24, 1978, with eighteen contracting states. Ninety-five states have now signed or acceded to this treaty, which operates under the Paris Convention and is administered by the WIPO n15

The PCT streamlined the international patent application, filing, searching and preliminary examination in a two-step procedure. It provides a mechanism for applicants to submit one application for patent protection in several countries. The first step requires the applicant to file an "international application" in one of several designated national patent offices. The PCT permits applicants to designate as many of the contracting states as desired during this filing process and delays, for as long as thirty months, the needfor multiple filings in the individual states. The PCT also extends the inventor's national state entry under the Paris Convention from twelve to twenty months.

Once an "international application" is received by an appropriate receiving national patent office, the office examines the application as to formal requirements, and, if it is designated as an "International Searching Authority," conducts a novelty search and completes an "International Search Report." This report indicates the classification of the invention, the technical fields searched and citations to the prior art. In almost 80% of PCT applications, applicants also request an International Preliminary Examination B a non-binding opinion on whether the invention "appears to be novel, to involve an inventive step (to be non-obvious), and to be industrially applicable. n16 The goal is to remove some

[*536] of the duplicative efforts expended by examiners from various countries in reviewing formalities and conducting prior art searches. By allowing one office to handle some of the pre-filing and post-filing requirements, examiners from other national offices are able to focus on the substantive applications of their domestic laws.

The next step of the PCT process is the "national phase." Once an applicant receives the International Search Report and an International Preliminary Examination, if requested, for his or her invention, the applicant may enter the national stage in the various patent offices where protection is desired. The patent officials at those offices examine the application in light of the PCT results, but based entirely on their own national patent requirements and decide whether to grant or deny a patent.

The PCT harmonized the form, content and procedural framework under which the patent application process is conducted by all the member countries. Although the PCT failed to directly focus on the substance of patent law, it indirectly provided substantial substantive impact. The accession process for member states requires minimum patent standards and regulations. Many countries augmented their national patent standards to become signatory states. Although the PCT has been criticized for its extensive procedural requirements and the lack full faith and credit accorded to International Search Reports and International Preliminary Examinations, the number of member states and applications submitted to the PCT have continued to grow n17

Although, the PCT rationalized the patent application process concerning filing, searching and preliminary examination, it does not result in the issuance of an "international patent;" the task and responsibility for granting patents still remain exclusively with the national, or in many cases regional, patent offices.

The intellectual property provisions of the North American Free Trade Agreement ("NAFTA" went well beyond the Paris Convention

[*537] and harmonized substantive intellectual property requirements or standards among Canadian, Mexican and United States. NAFTA became effective in January of 1994 and created an enormous free trade area: 360 million people and a total trade output of almost $ 6 trillion n18

The preamble to the intellectual property chapter in NAFTA expressly incorporates the substantive provisions of the other major multilateral agreements and compels member countries to "make every effort to accede" to those multilateral intellectual property agreements. NAFTA extends the concept of national treatment under the Paris Convention across all fields of intellectual property. It provides for a patent term of twenty years from the date of filing or seventeen years from the grant date of the patent, and it compels the member countries to ensure the effective, fair and equitable enforcement of intellectual property rights under domestic laws.

NAFTA proposes to benefit member countries through trade liberalization and more efficient utilization of resources. The economic benefits as a result of reduced tariffs are apparent to the member countries of NAFTA. The extension of fundamental patent protection principles to other areas of intellectual property and the inclusion of international trade elements expand the concept of regional agreements into new frontiers.

NAFTA was in the final stages of negotiations when the Trade-Related Aspects of Intellectual Property Rights ("TRIPs") was being considered as a part of the Uruguay Round of the General Agreement on Tariffs and Trade. The three-party NAFTA accord established two ground breaking principles: (1) intellectual property standards are appropriately the subject of a trade agreement and (2) those standards must be set at a very high level. NAFTA thus provided a critically important model for the worldwide TRIPs agreement, both procedurally and substantively n19

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The increasing importance of the relationship between intellectual property protection and international trade was recognized in the Uruguay Round of the General Agreement on Tariffs and Trade ("GATT"). During the Uruguay Round, negotiators recognized the benefit of intellectual property protection for both developed and developing countries. For develping countries, weak intellectual property protection discourages the necessary domestic investment in research and development that fuels economic development. Moreover, intellectual property protection no longer just promotes technological advancement domestically, it also provides means for nations to compete effectively in the global economy, spurring much needed technology transfer to developing countries.

Stimulated by a comprehensive draft agreement presented in December 1991 by GATT Director General Authur Dunkel - the so-called "Dunkel Draft" - member states ultimately agreed to an entire package of agreements: the creation of the World Trade Organization ("WTO"), amendment of the Dispute-Settlement Procedures, agreements on Trade in Goods and Agriculture, application of Sanitary Measures, agreements on Trade-Related Investment Measures and Countervailing Duties, Antidumping Measures, and Inspections and Customs Procedures - as well as the TRIPs Intellectual Property Accord n20

In the area of patents, TRIPs references the key articles of the Paris Convention and requires members to comply with them. It requires both national treatment and most-favored-nation treatment. It provides that no nation may discriminate in its patent system based on field of technology, a provision extremely important to the pharmaceutical and biotechnology industries, that had been discriminated against in several member states. It lays down the basic standards for patentability of inventions, establishes the term of patents to be at least twenty years from the time of filing the application, provides for effective enforcement of intellectual property rights both administratively and judicially, and sharply limits the ability of member states to grant compulsory

[*539] licenses under patents that they have granted n21 Member states not complying with the substantive provisions of TRIPs are subject to sanctions following a dispute procedure in the newly formed WTO.

By harmonizing substantive patent rules among the world's major nations, TRIPs clearly set the stage for the next steps in effective multinational patent protection.

As we shall see, the European Patent Convention ("EPC") permits inventors to employ an attractive, streamlined method for acquiring patent protection in nineteen European nations. Until recently, however, patentees had no opportunity to centralized enforcement in Europe. That may be changing. First, with respect to trademarks, and more recently with respect to patents, the courts of The Hague have moved to provide cross-border enforcement of intellectual property rights in Europe.

As pointed out by an international patent scholar:

In issuing multinational injunctions, the Dutch courts primarily relied on two different international agreements. The first is the European Patent Convention, which purports to provide a unitary patent law for its signatories. The Dutch courts reasoned that because their domestic patent law is integrated into the European system, a single legal determination under Dutch law suffices for all of Europe. Dutch jurists recognize that the absolute conformity of European patent law has not yet been practically achieved, as demonstrated by the differing results litigants have received from various national courts in parallel proceedings. But to the Dutch, such differences simply provide another reason for adjudication of several patent rights in a single forum: conformity of results is viewed as desirable both to the litigants and to the credibility of the European patent system n22

The Dutch court's use of these provisions prompted mixed reactions from the other jurisdictions of the European Union. The President du Tribunal de Grande Instance in Paris recently accepted the Dutch rationale and agreed to enforce an injunction issued against a French defendant by The Hague District Court. However, the United

[*540] Kingdom seriously questioned the authority of the Dutch court to render judgment enforceable in the U.K. In Chiron Corp. v. Oragnon Teknika Ltd, Mr. Justice Aldous stated in dicta that, although the basic law as to patent validity and infringement are the same in the U.K. and Holland,

the factual matrix is unlikely to be the same as the procedure for ascertaining the facts and scientific evidence are different. Further this case shows that there are many considerations which have to be taken into account by a United Kingdom judge before deciding that injunctive relief is appropriate, which do not appear to be relevant in a Dutch court. Thus it would be unlikely that a Dutch Court could be sure that an injunction would be appropriate in the United Kingdom upon an application in Holland for interlocutory, preliminary or final relief n23

It is too early to reach any conclusion regarding the European-wide use of cross-border enforcement of patents, although a German court in D sseldorf followed an approach similar to the Dutch one with respect to British patents.

In the United States, the Court of Appeals for the Federal Circuit has declined to engage in cross-border enforcement of patents. In Mars Inc. v. Kabushiki-Kaisha Nippon Conlux n24 Judge Alan Lourie, writing for a unanimous three-judge panel, held that the District Court in Delaware did not have jurisdiction to enforce a Japanese patent that allegedly was infringed in Japan, along with a case involving infringement in the United States of a corresponding U.S. patent. The court held that:

The district court lacks original jurisdiction over the Japanese patent infringement claim pursuant to 28 U.S.C.

1338(b) because a claim of infringement of a foreign patent is not a claim of unfair competition within the meaning of that provision. In addition, the district court erred in assuming authority to hear the claim under its supplemental jurisdiction pursuant to 28 U.S.C.

1367(a) because the claim is not so related to the U.S. patent infringement claim that it forms part of the same case or controversy under Article III of the U.S. Constitution n25

This seems to leave open, however, the possibility that there may be cases where a claim of foreign patent infringement may be so related under Article III as to be heard and decided in the United States.

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Although, as we have described, the Paris Convention provided a fundamental framework for multinational patent protection, applicants must bear the burden of filing in each of the national systems where they seek patent protection. The PCT rationalized the filing procedures for patent application in multiple countries; however, the applicant must still ultimately enter the patent application process in each individual national or regional office. These multinational patent protection frameworks stop well short of providing patent rights extending beyond single nations.

Important regional patent systems have been established in an attempt to address this shortfall. By providing centralized and uniform patent acquisition, regional conventions further encourage industrial development through broader geographic protection.

The oldest and the most prominent of the existing regional patent systems is the European Patent Convention ("EPC") n26 The EPC was adopted in Munich in 1973 to provide a simpler, more cost effective and reliable protection of patentable European invention in the contracting states. The EPC is also a regional patent treaty under the PCT;

European patents can therefore be granted on the basis of international applications filed in accordance with the PCT. There are currently nineteen member states of the EPC, including all of the states of the European Union ("EU") n27

Under the EPC system, it is possible to file a single patent application with the European Patent Office ("EPO") in one of the three official languages - English, French and German - and obtain patent protection in one, several or all of the nineteen contracting states if the

[*542] applicant so desires. An issued patent from the EPC confers on the inventor the same rights as would be conferred by a national patent granted in a designated state. However, this application effort does not result in a single Community patent. Applicants to the EPO receive a series of patents, akin to a "bundle of rights," enforceable in each member state designated by the applicant. Patent rights are enforced by the respective courts of the member states as if the patents were issued by each state individually. The patentability requirements under the European patent system are "patentable subject matter," "absolute novelty" of the invention, an "inventive step" and "industrial application." The European patent applications are filed in one of the three official languages of the EPO; however, applicants who are nationals of member States may file in their own language, provided a translation in one of the three official languages is provided within thirteen months of the priority date.

After the EPO receives a patent application, the EPO accords the application a priority date and conducts an examination as to formal requirements. The EPC is a first-to-file patent system: the first true inventor who undertakes the use of the EPC to disclose his or her invention to the public and secure patent rights will receive an EPC patent. Priority may be claimed through a prior national application according to the Paris Convention. After the formality examination and the submission of proper fees, the application is forwarded to a Search Division, which conducts a novelty search and provides a European search report, and - for each international application under the PCT-a "Euro/PCT" search report. The European patent application is then published eighteen months from its filing date or the priority date, along with the search report.

A European patent application is examined only upon an express request for examination and payment of the examination fee. The request must be filed by the applicant within six months from the publication of the European search report. Failure to request an examination is deemed to be a withdrawal of the application. The term of the European patent is twenty years from the filing date.

The EPC provides for post-grant opposition proceedings. A notice of opposition must be filed within nine months from the publication date of the European patent. The opposition covers the patent with respect to all designated countries. Determination of infringement of a European patent is reserved to the national laws of the contracting states, as we have noted.

The lack of post-grant harmonization of patent rights creates several difficulties for patent holders as well other parties interested in the patented technology. For example, invalidity found in one state does

[*543] not ordinarily affect the validity of the same patent in other states. Thus, unless cross-border enforcement under the Brussels Convention becomes the accepted practice, patent infringement litigation must take place in all the states where infringement occurs. Although the threat of litigation may prevent potential infringers, patent infringement litigation typically occurs after the parties have substantially invested in the patented technology. Multiple claim interpretations also produce uncertainty and inconsistencies for the patent holder; failure to provide centralized management of post-grant proceedings may force parties to relitigate identical issues.

The EPC's lack of uniform post-grant proceedings and the costs associated with translation, mandated representation fees and national maintenance fees create substantial barriers to patent applicants and, most would agree, produce a less than ideal system of regional patent protection.

Essentially at the same time the EPC was agreed to, the member States of the EU created the Community Patent Convention ("CPC") on December 15, 1975, as an attempt to eliminate the post-grant territorial limitations of the EPC patent n28 The Convention, would have consisted exclusively of EU nations and was designed to have entered into force three months after the deposit of the ratification instrument by the last signatory state-an event that has not yet occurred and is not expected to.

The goal of the CPC was to offer in the territory of the EU a single community patent on the basis of one uniform patent law. Thus, a Community patent would have equal effect throughout the territory of the Common Market and could only be granted, transferred, revoked or allowed to lapse with respect to the entire EU territory.

The concept of the unitary patent is the major benefit that the CPC would have had over the EPC. Whereas the PCT rationalized the filing procedure and the EPC centralized the granting procedure with respect to the contract states, the CPC would have combined the patents for the EU into one unitary super-national patent similar to the U.S. patent in the United States.

The unitary concept would have allowed applicants to pay a single patent application fee for all states of the EU. Renewal fees for

[*544] the Community patent would have been payable to the EPO, and the fees could have been no higher than three comparable national renewal fees.

Although the CPC would have provided a unified base for a true regional patent system, eliminated duplicative administrative efforts and allowed for the efficient utilization of the limited personnel and resources of the European countries, it would have had one very serious drawback: the very high cost of the translations of patent applications into all of the Community languages.

In 1958, twelve former French Oversees Territories gained their independence. Since these independent republics lacked the resources and personnel necessary to maintain the patent system that France had previously provided, they joined forces and created the Organsation Africaine de la Propri t Intellectuelle ("OAPI") n29 The OAPI is different from the other regional patent systems in that OAPI member states have all renounced their national sovereignty to grant patents in their own respective states. Instead, the OAPI grants a single patent from the regional patent office that is separately valid in all member countries.

The OAPI is a "special agreement" under Article 19 of the Paris Convention. The OAPI requires each member nation to adopt a single uniform substantive patent; however, that law is subject to individual interpretation in each state. If one nation revokes the enforceability of a patent within its territory, that patent still remains effective in all other member countries. Thus, the OAPI in theory minimizes post-grant uncertainties involved with an issued patent; however, the lack of a central administering body to address the post-grant matters partially counteracts the unified substantive protection envisioned by the treaty.

Similar to OAPI, the African Regional Industrial Property Organization ("ARIPO") is the patent union for the English-speaking African nations. ARIPO was created under the Lusaka Agreement on the Creation of an Industrial Property Organization for English-speaking Africa on December 7, 1976 n30 Unlike OAPI-and more like the EPC

[*545] - ARIPO coordinates only the pre-grant proceedings. After the grant of a patent, the patent is subject to the national laws of each designated state. The patent has the same effect as a national patent granted by each designated state, with the patent term being the same as national patents in the designated state.

The application is submitted to the office of a contracting state with designation of other contracting states from which patent protection is desired. If the application meets the formal requirements, the application is transferred to ARIPO Central Registry in Harare, Zimbabwe, for substantive examination. Upon a favorable substantive examination, the ARIPO office then notifies each of the designated contracting states of its intention to grant a patent. Each contracting state, in turn, then has six months in which to notify ARIPO whether that patent will have effect in its territory. After the six-month period, ARIPO will grant a patent to be effective in all the designated states that have not notified ARIPO of an unfavorable review of the patent.

In 1991, the Union of the Soviet Socialist Republics ("USSR" or the Soviet Union) disintegrated in ways no one could have anticipated. As the resulting new republics struggled to remove the remnants of the past "centrally planned economies" to embrace a free market economy, they realized that cooperation among them was vital. By the end of 1993, twelve of the former republics created the Commonwealth of Independent States ("CIS")-all of the new republics except for the Baltic states of Estonia, Latvia and Lithuanian n31

To afford patent protection while realizing the lack of the necessary experience and resources to do so, the members of the CIS developed a multinational system of uniform protection of patent rights. This resulted in the formation of the Eurasian Patent Convention ("EAPC") on August 12, 1995 n32 The EAPC created the Eurasian Patent

[*546] Office ("EAPO") in Moscow, which began operations on January 1, 1996. The EAPC allows anyone, regardless of nationality or domicile, to obtain a Eurasian patent ("EAP") by filing a single application and making a single payment at the time of filing.

The patent application procedure in the EAPO begins with a submission of an application to the EAPO in Russian, the single official language of the EAPC. As one would expect, the EAPC adopted the nearly universal "first-to-file" system of priority. Following an examination as to formal requirements, a search report and the application are published eighteen months from the filing date or, where priority is claimed, from the priority date. An applicant desiring substantive examination must submit a request within the first six months from the date of publication. A board of three experts from three different contracting states performs the examination of the patent application. If the EAP application is refused, the applicant may request renewed examination or transform the Eurasian application into a national application. The application may be amended in light of the examination results, and an applicant may also amend a granted patent. If an EAP is granted, there is no need to register it in the national patent offices of the selected contracting states. The annual fees are paid through the EAPO in Moscow, with the patent being in effect in all contracting states for which annual fees are paid. The annual fees for each of the contracting states are determined by each national patent office.

Like the EPC, the standard of patentability under the EAPO requires the invention to be patentable subject matter, be new, involve an inventive step and be industrially applicable. The patent term is twenty years from the filing date of the application, subject to the payment of annual renewal fees. The substantive rights of nullity, infringement and compulsory licensing are reserved to the national legislation of the contracting states. National courts may decide the validity of the patent, but the ruling would be applicable only within their respective territories.

Settlements of disputes regarding the validity and infringement of the EAPs are based on the EAPC and regulations under the Convention, rather than being resolved by the provisions of the national legislative acts. National courts may resolve these disputes where they arise in a given contracting state, but the decision applies only in the territory of the contracting state. Compulsory license provisions under the EAPC are in accordance with the Paris Convention terms. Again, like the EPC, the expenses of acquiring multiple patents are incurred only upon the actual patent grant. Unlike the EPC, the EAPC eliminates the need for expensive translations, with Russian being the language used exclusively.

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Thus, although the world community is just beginning to gain experience with the EAPO, it does provide-at least in theory-a more expeditious patent system for processing patent applications than the other regional patent conventions. Although it fails to provide post-grant unification, the EAPC is designed to establish a system of patent protection for the CIS. The issuance of a single patent, filed at a single location and in a single language, are features that could serve as a model for the next generation of multinational patent systems.

Even with the remarkable progress that has been made toward multinational protection of inventions, we realize at the outset that attempting to specify the essential characteristics of a World Patent System will, at best, be thought provoking and, more realistically, highly controversial. But in our view, scholars, practitioners and, most important, political leaders and policy makers need now to begin to define the broad outlines of such a system n33 We provide ourselves ample flexibility by saying that the system-or one resembling it-will come into effect "Circa 20XX AD." Will the system be in effect in the year 2001? Clearly not. Will it-or something analogous-be in effect by the year 2099? Without a doubt!

The overriding characteristic of the World Patent System is that is must be just that: a multinational organization established, managed and administered, not by national patent offices, but by international civil servants in a multinational setting established by treaty. At least initially, it will undoubtedly operate in parallel with national systems. But to be truly effective, it will grant not a "bundle" of national patents-as is now done by the European Patent Office-but a single unitary patent respected in all of the member states.

The worldwide system would, of course, have regional offices-to search and examine patent applications, to grant patents, and to staff regional branches or "circuits" of a World Patent Court, described later in this article. There are at least eight candidates sites for such regional

[*548] offices: Europe, Japan, China, Latin America, Africa, Eurasia, East Asia and North America n34 Deciding where to locate offices of multinational organizations has traditionally been a matter of intense diplomatic negotiations involving factors well beyond the scope of this article. A strong case can be made for each of these eight locations-and perhaps several more. Most importantly, the World Patent System must not be viewed as "belonging" to a specific region or constituency.

As between two true inventors-as contrasted with copiers-every nation in the world, except the United States, provides a patent to the inventor who first undertakes to use the patent system to disclose his/her invention to the public and gain protection n35 In shorthand, this is called a first-to-file system of priority. For reasons that perhaps made sense historically, the United States has a so-called first-to-invent system of priority that is intended to provide the patent to the first "inventor," i.e., the first person to "conceive" and/or "reduce the invention to practice" under an arcane and burdensome complex of substantive and procedural rules and regulations. In the United States, as one might expect, there are clear exceptions to the first-to-invent rule. For example, if a first inventor uses the invention commercially but secretly for more than a year prior to filing a patent application, he or she is barred from getting a patent, but a second inventor, not knowing of the secret commercial use, can obtain a valid U.S. patent n36

As early as 1965, a major Presidential Commission studying the United States patent system strongly recommended that the United States adopt the otherwise universal first-to-file system n37 Given the increasing

[*549] use of low-cost and easily filed provisional applications and a personal defense of prior user rights, such a system would be of significant benefit to independent inventors and small businesses.

Except for the cloud now hanging over every patentee's head that someone else will later claim to be a "first inventor," the United States now has a virtual first- to-file system. The U.S. Patent and Trademark Office ("USPTO") receives more than 220,000 patent applications each year. Historically, about 200 to 225 of these-or 0.1%-end up in interferences. And of those, the "junior party," the second to file, prevails in fewer than one-third of the cases n38

An argument is often made that adopting the universal first-to-file rule would somehow disadvantage independent inventors and small businesses-two classes of extremely important and productive users of the U.S. patent system. But the reality is exactly the opposite. Forcing a small-entity inventor into an interference proceeding with a large and determined company that filed a patent application after the small entity could cost the small entity from $ 500,000 to $ 1,000,000 (including court appeals), according to current estimates, to prevail. More importantly, small entities by their very nature can move more quickly than larger bureaucracies. And here is where the United States provisional application comes into play. By filing a complete technical disclosure of the invention, a small entity can readily secure priority rights in a first-to-file system without a major expenditure of resources. This then gives the small inventor a year in which to file a professionally prepared patent application.

Enactment of prior user rights, as now proposed in the major patent reform legislation under active consideration in Congress n39 will assure that any first inventor can continue personally to use his or her invention free of someone else's patent rights. Today, if a small entity loses an interference procedure- either because it lacked the considerable resources necessary to prevail or because of the very specific and complex rules governing "conception," "diligence" and "reduction to practice," either "actual" or "constructive"-it can be enjoined from

[*550] practicing its own invention, an anomalous result most would agree. Enactment of prior user rights will cure that.

Finally, it simply defies logic to contend-as some apparently do-that the 178 other patent-granting nations that have adopted a first-to-file system have done so at the expense of their own independent inventors and small businesses.

For all of these reasons, in the World Patent System, priority among competing true inventors would be decided by reference to who was the first to undertake the use of the system, i.e., the first to file a patent application.

Beginning June 8, 1995, applicants for patents in the United States have been able to secure both a U.S. filing date-and an international filing date, both under the Paris Convention and the PCT-by filing an inexpensive new type of application-a so-called Aprovisional application. n40 In broad outline, such an application must include a disclosure of the invention that would satisfy the requirements of 35 U.S.C. '112. Specifically, patent claims are not required, and there are virtually no formal requirements. In short, for a modest fee of $ 150 ($ 75 for small entities), an inventor can achieve a one-year period in which to evaluate the commercial value of the invention and the desirability of filing a professionally prepared regular patent application.

And this one-year period does not count against an inventor in computing the twenty-year-from-filing patent term.

Because of the importance of provision applications to independent inventors and small businesses-especially in a system that would adopt a first-to-file model-they should be included in the World Patent System.

Under U.S. law, an inventor can disclose his or her invention publicly or commercialize it prior to filing a patent application as long as the application is filed within one year n41 This one-year "grace period"

[*551] benefits society by encouraging prompt disclosures and commercial use of an invention without the inventor forfeiting his or her patent rights.

That goal is-or should be-shared universally n42 Thus, although European patent laws do not now provide any grace period, the World Patent System should provide inventors the flexibility of such a grace period.

Patents are among the most sophisticated and complex of legal documents. High technology inventions are defined in the patent claims in terms that are always somewhat broader and more abstract than the invention disclosed in the patent specification and drawings. The interpretations of those claims against the body of worldwide prior art and against an alleged infringer are at the heart of every patent n43

Currently, as many as two dozen languages must be used to reasonably cover a single invention internationally. As we have noted, the EPO now has three "official" languages-English, German and French-in which examinations are conducted, but the bundle of patents elected at the time of the EPO grant must be translated into the respective language of each selected country. Electing all nineteen of the EPO countries requires no less than ten translations at the end of the examination process. With the addition of more EPO memberships from Central/Eastern Europe-such as Poland, Bulgaria, Romania, Hungary and Czech and Slovak Republics-the costs of translations in the EPO alone could simply become overwhelming. This European ATower of Babel n44 will have many neighbors if the newly industrialized countries of East Asia and other regions insist on using their own languages in their emerging patent systems. The design of a World Patent System that would use all of the languages of the world would clearly not pass the "laugh test."

Although some ardent chauvinists are reluctant to admit it, English is now the world language of trade, science, technology-and intellectual property. By conservative estimates, 750 million persons

[*552] speak English, almost half of them as their native language. If India and China are added, some estimates range toward two billion. Two-thirds of the world's scientific information is published in English, n45 and 85% of all information now stored in computers is in English n46 A large majority of cases filed in the EPO are now in English, with those filed in French accounting for less than 10%. Cases in the EPO originating from outside Europe-notably from the United States and Japan-are virtually all in English. All of the patent examiners in the EPO, JPO and China Patent Office are required to be fluent in English. A proposed East Asia Patent Office B a planed regional patent system of Indonesia, Republic of Korea, Malaysia, Singapore, Taiwan, Thailand, among others-is now being designed with the assumption that English will be the single language employed.

Choosing English as the language of the World Patent System should in no way be an affront to the rich culture and history of France, Spain, Portugal or any other country or region. Rather, it simply recognizes that English is the only practical choice for a World Patent System that will demand a common world language. Just as English has been used as the only language for air traffic control worldwide for decades, there should be an agreement that English will be the language of the World Patent System.

Given the success of the JPO in moving to a "paperless" environment, and the corresponding strides in the United States and the EPO, the World Patent System will use a single electronic database of worldwide prior art against which to search and examine patent applications n47 By "Circa 20XX A.D." machines will be fully capable of "conversing" with patent professionals. And, although patents will be examined and enforced in English, the system must take advantage of machine translations to provide patent disclosures to all countries in their own languages. This will reinforce the use of patents as a uniquely rich source of scientific, technical and business information.

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Although there have been limited instances of cross-border enforcement of patents-notably under the Brussels Convention, as we have noted-essentially patents are national instruments to be enforced by national courts. The World Patent System we envision would be in sharp contrast to this. There would be a single World Patent Cour n48 with branches or "circuit" courts at the locations of the regional patent offices to decide appeals from those regional offices of the World Patent System and to hear and decide enforcement actions, including both infringement and validity issues. Under the treaty establishing the World Patent System, decisions of the World Patent Court would be given full faith and credit and implemented and enforced through national courts of all of the member states.

Appeals and enforcement actions would not be heard by national jurists, but rather through panels of expert multinational jurists, appointed through a merit system administered by the World Patent System. Trials of patent enforcement actions would be presided over by what we would refer to as hearing examiners or special magistrates, throughout the nations that establish the World Patent System. To ensure impartiality, the multinational jurists who make up the World Patent Court and the hearings examiners or special magistrates would be assigned, not based upon their nationality, but rather on their technical expertise and to assure a fair and competent balance in any hearing or enforcement action. An appeal in a United States regional court, for example, could be heard and decided by a three judge panel-one from Europe, one from Latin America and one from Asia-depending on the results of impartial, probably random, assignments. The World Patent Court would have to have firm control over pretrial and trial procedures in preparing cases for decisions, drawing upon the best experience of the member states.

To lower the cost of patent enforcement actions, alternate dispute resolution should be strongly encouraged, again based upon the best international models.

The TRIPs agreements that we have already mentioned achieve more, faster than anyone could have predicted just one decade ago. It

[*554] demonstrated quite dramatically that political will, implemented by skilled and innovative negotiators, can overcome generations of local biases.

The World Patent System would build on TRIPs accord and incorporate its many features, including: no discrimination by field of technology, twenty-year term from filing an application, and strictly limited compulsory licenses, to name just a few of the key TRIPs provisions.

In this article, we have traced the broad outlines of what we see as an effective World Patent System, one designed to better serve inventors and industry. We in no way underestimate the level of statesmanship that will be required in reaching agreement among the major countries of the world on such a system-certainly no less than that required when our Founding Fathers delgated to the new Federal Government the exclusive power to grant patents, which until then had been granted by individual states.

We also recognize that there are a host of critically important but lesser matters that would need to be agreed upon in establishing a World Patent System. It is certain that all of the existing national/regional patent systems of the world would remain in place during the initial years of a World Patent System to function in parallel with it until all concerned gained experience and comfort with the effectiveness of the new system. That, of course, has been the model followed in all the efforts described earlier in this article.

Initially, however, these are some of the matters that would need to be addressed and questions answered n49 What would be the definition of patentable subject matter? Would patents be granted for genetically modified living organisms, transgenic animals, whole or partial genes that have been sequenced or computer-related software-to name just a few of the new and emerging high-technology areas where patent protection is critically important? Would the World Patent System require that the inventor disclose his or her "best mode," as now required by the U.S. la n50 or would the

[*555] rules follow those obtaining patent in the rest of the world, which many experts favor? Would an inventor be required to disclose relevant prior art to the regional offices of the World Patent System, as is now required by Rule 56 of the U.S. practice n51 What would be the nature and scope of post-grant procedures? Would they be limited along the lines of the U.S. reexaminations or would they be patterned after the more complex and costly opposition procedures of the EPO and Japanese Patent Office n52 Would there be a Doctrine of Equivalents, as recently reinforced by the U.S. Supreme Court in Warner-Jenkinson Co. v. Hilton Davis Chemical Co n53 and by the opinion of the Japan High Court in Sumitomo v. Genentech n54

C. Would there be criminal sanctions for infringement, as there are in many countries today n55

What would be the governing structure of the World Patent System? Member states must be proscribed from appropriating maintenance fees or annuities for purposes other than the administration of the World Patent System. Patent claims-the legal/technical definition of the invention required in every patent-are the heart and soul of each patent.

They define the metes and bounds of the patented invention. Would claiming practice be based on peripheral claiming, as in the U.S., or use a so-called central claiming system used in Germany, for example n56

[*556] Would world patents be extended to make up for delays in processing the patent application or for regulatory delays imposed by national governments, e.g., FDA delays in connection with pharmaceuticals n57 Given the need for a worldwide electronic database of prior art in the World Patent System, undocumented prior art should not be used to negate novelty, as is now the case under the EPC. In that same vein, patent-defeating commercial activity should, in our view, be based on actual sales rather than the more nebulous "on-sale" criteria used only in the United States n58

Although the list of such "details" appear formidable in each area, international patent experts are quite familiar with the advantages and disadvantages-the detailed tradeoffs-of choosing one course over another. And in virtually each area, agreements are crystallizing on what could be called "best practice." Thus, once the broad outlines of the World Patent System were agreed to, none of these ancillary issues would be "show stoppers" in treaty negotiations.

Since the Meiji Restoration and the post World War II Reconstruction period, Japan has emerged as a global leader both in its economic development and technological advancements. In a report to the Commissioner of the Japanese Patent Office ("JPO") by the Commission on AIntellectual Property Rights in the Twenty-First Century, n59 the Commission declared that Japan is now entering the third great revolution of its modern history, and to meet the challenges of the twenty- first century, Japan must enhance the value of the intellectual property rights.

The report recognized that unlike fundamental human rights, intellectual property rights are not inherent, rather they are granted by the governments to achieve defined policy objectives. As technological developments and advancement become borderless in their application, the Commission concluded that the current country-by-country approach to patent procurement is insufficient to provide adequate intellectual property protection.

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The Commission then proposed that Japan should take a leading role in promoting the establishment of a global patent system, and proposed a "roadmap" for the journey to a global patent system. The international patent harmonization scheme would involve a four-step process as cooperative efforts evolve from the current country- by-country system to a global patent system. These steps include (1) the mutual recognition of patent search results among the Trilateral Partners-the Japan Patent Office ("JPO"), the EPO and the United States Patent and Trademark Office ("USPTO")- (2) the mutual recognition of patents, (3) the establishment of a "Trilateral Patent," and finally (4) the creation of a global patent.

The first step would involve the mutual recognition of patent search results. This step would be an extension of the current international application through the PCT. To promote the mutual recognition of patent searches, the Commission recommends initiating personnel exchange programs for patent lawyers and examiners among the three patent offices, establishing a common information technology structure, taking advantage of the current rapid advancement of telecommunication technologies to allow for the sharing of examination information, and exchanging and utilizing patent search results among the patent offices.

The Commission also advocates the use of English as the language in Japan's prior art search and examination as part ofthe effort to achieve mutual recognition. Japan should make available to foreign patent offices their experience with electronic filing ("paperless system") as well as the Japanese patent retrieval system ("F-term system"). In addition, the Patent Abstract of Japan ("PAJ") should be disseminated on the Internet as well as by CD-ROM.

International efforts would include taking the lead in WIPO discussions on harmonizing legislation and office practices, and promoting efforts in the development of simple and swift international patent procurement procedures. The Commission recommended that Japan urge that the United States to adopt automatic publication of patent applications eighteen months after they are filed, as well as a first-to-file patent system through bilateral agreements.

The second step would involve the mutual recognition of patents. In the Commission's view, the efforts involved with the mutual recognition of patent search results, the establishment of bilateral agreements, and greater harmonization of patent procurement process, will inevitably progress into the mutual recognition of patents.

These cooperative efforts, in turn, are intended to lead to the establishment of a Trilateral Patent, recognized in Europe, Japan and the United States. And, finally, within

that framework, these efforts will ultimately lead to the creation of a global patent system.

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On June 24, 1997, the European Commission, acting through DG-XV, released a "green paper" entitled "Promoting Innovation through Patents. n60 The purpose of the green paper was to stimulate industry-wide debate on whether users' needs are currently being met and whether new measures are called for. The paper is structured in question form to encourage broad consultation with European industry.

The green paper's objectives are:

to gain as full a picture as possible of the situation as regards the protection of innovation by the patent system in the European Community; to examine whether new Community measures are necessary and/or whether existing arrangements need to be adjusted; and to consider what these new measures could involve and what form they could take n61

Officials of the European Commission have repeatedly stated that major changes to the European patent system, such as the introduction of a single patent covering the whole European Union, will happen only if European industry supports such measures.

A two day hearing was conducted in Luxembourg, November 25 and 26, 1997, in a major effort to solicit European industries' views on the questions posed in the green paper. At that hearing, European industry was remarkably united in the view that the current European patent systems were not serving industry as well as they should and that a new and revolutionary approach should be followed, not to improve the present systems but rather to replace them with a new unitary community patent covering the whole territory of the European Union.

To advance the dialogue, the staff of the Commission published a seventeen-point report summarizing the views advanced during the Luxembourg hearing. The full report is reproduced in Appendix A. Basically the industry spokesman pointed to the clear need for a unitary community patent, "granted, transferred, revoked, or allowed to lapse only in respect of the whole community." A majority of the groups represented at the hearing favored the creation of a "Specialized European Patent Court," with the minimum requirements recommended being the creation in each country of a Specialized Patent Court with appeals being heard by a Specialized European Patent Court. Infringement and validity questions should be dealt with together, in the view of

[*559] the industry, and preliminary injunctions covering the whole community should be available at a reasonable cost.

On the language question, a large number of industry spokesmen supported a radical solution: "using only one language for the granting procedure, with no translation of the granted patent afterwards." Other groups are in favor of a "less radical solution."

As in any serious move toward a multinational or global patent, the spokesmen at the hearing expressed the view that "existing national patents and national patent offices must be maintained, their role 'tailored to local needs.'"

Consultations between the Commission and industry are concluding and follow-up consultations with member states will begin in early summer 1998. A detailed legislation proposed is scheduled to be completed in early 1999 for consideration by the European Parliment n62

The European Commission's green paper, the Luxembourg hearing, and the published report of the major conclusions, in our view, demonstrate real leadership toward a World Patent System, with a European patent system serving as a critically important precursor.

Although not focused directly on the creation of a World Patent System, the United States government has moved effectively in two important areas with this long- range goal in mind.

First, the United States has taken the lead in the WIPO to move toward the creation of a global secure high-speed digital network to provide a common automated database of prior art-so-called "digital libraries"-to all of the patent offices of the world, as well as being available to the public at large worldwide via the Internet. As we have already mentioned, such a network would be indispensable to the operation of a World Patent System. The United States initiative in this regard was approved by the Assemblies of the Member States of WIPO in March 1998. Because of the importance of the digital infrastructure that will be established by the WIPO under the leadership of the USPTO, we have included as Appendix B the WIPO-approved description of the program. The program is essentially the same as that recommended by the USPTO to the WIPO in June, 1997.

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Secondly, the USPTO is pushing for significant improvements in the PCT to make it far more "user friendly" than it is today. Although the United States specifically declined to support efforts to establish a first-to-file system of priority in the WIPO negotiations on a Patent Law Treaty ("PLT" n63 -thus removing the centerpiece of the negotiations- it has remained actively engaged in those negotiations. For example, the United States is urging that, through the PLT, applicants be able to file the equivalent of provisional applications, in any language, with or without claims, to secure an international filing date in any patent office.

This year, the EPO, JPO and USPTO will conduct a pilot program to exchange search results with respect to ninety PCT applications in eighteen fields of technologies, with the applicants' advance permission. A similar pilot program in 1999 will involve the concurrent search and examinations of non-PCT applications among the three offices in selected areas of technology. The objective of these efforts is to bring about a transition to a system that incorporates a binding evaluation of patentability. This ties directly to the first area: the availability of common electronic search tools, databases and the Internet, which are the keys to achieving some form of mutual recognition of the work product of patent offices.

In a major statement to the "International Symposium on the PCT System in the 21st Century" in Beijing in April 1997, a senior USPTO official looked beyond these intermediate steps toward a global patent in these terms:

At some point in the future, we will have an international patent system that will have characteristics similar to those we find in the copyright area. That is, the right of an inventor will be universally recognized without having to seek patent protection in each of the countries of the world. It is likely that we will experience a number of intermediate solutions on the way to this true "global patent," but we have started down that path and we are not likely to turn back n64

Well said!

A World Patent System-along the lines as we have described it-will be established in the twenty-first century. The only real question

[*561] is: How soon? Leading to our optimism that it will be sooner rather than later is the remarkable success of the Uruguay Round of the General Agreement on Tariffs and Trade-the landmark "TRIPs" agreement. At the time that was urged by the Reagan Administration-with full bipartisan support in the United States-the issues, if anything, were more daunting than those we have identified.

The principles and rules governing the protection of new technology worldwide are-or should be-no less universal than the principles governing the design and building of a bridge. A solid foundation for an effective World Patent System has been laid. It is now time to complete the structure.

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Appendix A

The following report of the Luxembourg Hearing was prepared by the staff of the European Commission.

European Commission

Hearing on Patents

Luxembourg, November 25-26, 1997

Conclusions

There is a clear need for a new unitary Community patent covering the whole territory of the Community. This would reinforce the functioning of the Single market, greatly facilitate the management of patent rights and should enhance the enforcement of these rights. The Community Patent should have a unitary character, having equal effect throughout the Community. It should be granted, transferred, revoked or allowed to lapse only in respect of the whole Community. A Community patent should be established preferably in the form of a Community Regulation, in order to facilitate its adoption and implementation. The Community Patent must be affordable, its costs being comparable with a European patent covering a small number of Member States and also be comparable to a U.S. patent. On the language question, a large number of user representatives on the side of the industry support a radical solution. This consists of using only one language for the granting procedure, with no translation of the grated patent afterwards. Other groups are in favour of less radical solution. A number of interventions stressed the use of all national languages. The judicial system should provide for legal certainty. The enforcement of the patent, including considerations of validity, should be uniform and predictable throughout the Community. Decisions should be made within reasonable delays. In this context, a majority of the groups represented at the hearing favour the creation of a specialised European patent court. The minimum requirements recommended being the creation in each country of a specialised patent court with appeals being heard by a specialised European patent court. Infringement and validity questions should be dealt with together.

Preliminary injunctions covering the whole Community should be available at a reasonable cost.

[*563] 7. The question of prior use should be harmonised at Community level. 8. The European patent should coexist with the Community patent and should be further improved. Initial filing fees should be reduced and the due date of designation fees should be postponed to the date of patent grant. Translation requirements should be reduced and further reduction of fees should be contemplated. Centralised filling of the translation at the European Patent Office should be further explored. 9. The European Patent Office must pursue its task of managing the European patent as a centralised patent grating authority but should also grant any future Community patent. Co-operation between the Commission and the European Patent Office should be reinforced. 10. Existing national patent security and national patent offices must bemaintained. Their role should be tailored to local needs. The income they received from fees of European patents should serve to reduce costs and support activities directly linked to innovation. A limited number of representations supported the idea of decentralising activities away from the EPO to the national patent offices. 11. The present legal environment concerning software-related inventions does not ensure sufficient transparency and should therefore be clarified. The deletion of Article 52(2)(c) of the European Patent Convention is supported, as is further action to ensure a harmonised approach throughout Europe. 12. The question of employee's inventions does not seem to be a first priority for action at Community level, but would benefit form further study. The preparation of model clauses and arbitration procedures seems to be an appropriate way forward. 13. Formalities such as forms, delays, etc. should be streamlined at Community level and unnecessary administrative burdens suppressed. 14. As regards patent agents, the principles of free movement of services and freedom of establishment should apply fully to this profession. Some further harmonisation might also be necessary to ensure consistency throughout the Community. Certain associations are in favour of a right of access to the courts for patent agents. 15. Legal cost insurance is a valuable concept which should be further studied. It is potentially useful for SMEs. The private sector could lead on this with the Community facilitating exchange of information and experience. 16. Reduced fees for SMEs is supported by a number of associations provided that the scope of the scheme is clearly defined.

[*564] 17. The particular situation of research organisations and other non-profit organisations should be considered in the context of the modernisation of the patent system.

Appendix B

The following is the description of a program to establish a Global Information Network that was approved and funded by the Assemblies of the Member States of WIPO, March 25-27, 1998. The program was recommended to the WIPO by the United States in June 1997.

I. Establishment and Operation of a Global Information Network

A. Objectives

To establish a network infrastructure that makes available intellectual property information to the public and also provides sufficient telecommunication capacities and security mechanism to allow intellectual property offices to access information useful for grant and registration activities. To support the deployment of information technology infrastructure in intellectual property offices, with special support to offices in developing countries, assisting them in building the necessary infrastructure and in training for use of the system. To implement and operate state-of-the-art facilities to ensure that the network will be operational 24 hours a day.

B. Background

Certain external communication facilities exist in the Secretariat to allow the exchange of information with intellectual property offices and the public throughout the world: leased line links are now used by some intellectual property offices for the exchange of electronic data with the Secretariat; the Secretariat maintains a Website providing public information; and the staff of the Secretariat has access to the Internet and electronic mail facilities.

C. Main Activities

Defining the technical requirements and preparing the project specifications for the different network components; issuing the

[*565] tender for the contracting of the various network components, technical assistance and training services; and initiating the deployment of the network. Establishing a dedicated network backbone with appropriate security facilities, in accordance with recommendations from the SCIT, and, where appropriate, in cooperation with certain intellectual property offices having established national or regional networks, to be used mainly for the exchange of data (e.g., intellectual property grant and registration information) and related information. Providing the basic assistance, materials and equipment necessary to allow the deployment and use of network infrastructure in developing countries, in coordination with development activities under Main Program 06.

D. Expected Results

The network backbone will be established. Public network facilities will be used to interconnect the intellectual property community and to make available intellectual property information. The network will provide an infrastructure where intellectual property offices, copyright collective management organizations and other users can exchange information, thus facilitating their activities. The network will be useful mechanism for WIPO's cooperation for development activities, reaching a much wider range of beneficiaries in developing countries. The network will be used to provide information through the Intellectual Property Digital Libraries, to implement distance learning systems and to promote the sharing of knowledge regarding intellectual property among countries and the public.

II. Provision of Intellectual Property Information Services

A. Objectives

To promote the availability and exchange of intellectual property information for enhancing the worldwide use of such information and the means for the protection and enforcement of intellectual property

[*566] rights, the transfer of technology, and the efficiency of grant and registration activities by intellectual property offices and the Secretariat. To develop the intellectual property information (both industrial property and copyright information) to be made available on the WIPO global information network in a progressive manner. To support the provision of information on the network through standardization, search and retrieval tools, security services and other useful mechanisms.

B. Background

The cooperation and exchange of information among intellectual property offices and the Secretariat is mainly based on paper documents or portable electronic data carriers such as magnetic tape and CD-ROM. There is a growing need for on- line data exchange in addition to these conventional data carriers.

C. Main Activities

Establishing and promoting Intellectual Property Digital Libraries containing a comprehensive electronic set of intellectual property information (e.g., on international applications published under the PCT) to be made available on the WIPO global information network both to intellectual property offices and to the public. Continuing the development, and promoting the use, of standards for intellectual property information and for the dissemination of that information. Continuing the revision of the IPC, Nice, Vienna and Locarno Classifications as search tools for patent, trademark and design data, developing electronic management systems for such classifications, and publishing the classifications on CD-ROM and the network. Evaluating and addressing specific security requirements in the area of intellectual property information exchange. Developing and acquiring software applications to support the delivery of services on the network. Providing information and training on the use of the network and the Intellectual Property Digital Libraries, with special attention to the needs of intellectual property offices and users in developing countries.

[*567] Commissioning pilot projects and activities for evaluating and validating potential standards and solutions, as well as for assessing the scalability of such solutions.

D. Expected Results

The provision of intellectual property information on the WIPO global information network, including the newly created Intellectual Property Digital Libraries, will allow access to valuable resources, thereby enhancing the protection and enforcement of intellectual property rights and the dissemination of technological information. The provision of intellectual property information on the network will facilitate coordination among the Secretariat, intellectual property offices and the private sector. The establishment of support services (including training) and the adoption of standards will facilitate the exchange and dissemination of intellectual property information in electronic form.

III. Establishment of the Standing Committee on

Information Technologies (SCIT)

A. Objective

To establish and support the Standing Committee on Information Technologies (SCIT), which will provide guidance on the development of the WIPO global information network and on the provision of intellectual property information services.

B. Background

The establishment of a new committee to address the global information network and related matters was proposed during the July 1997 session of the Working Group on Information Technologies for Intellectual Property.

C. Main Activities

Formulation of recommendations and policies by the SCIT, for approval by the WIPO General Assembly, concerning issues pertinent to the process of providing intellectual property information in a digital networked environment. Establishment of the minimum possible number of working groups by the plenary session of the SCIT, with a view to facilitating the preparation

[*568] by representative from countries having limited qualified human resources, for example, (i) the Information Infrastructure Working Group, (ii) the Standards and Documentation Working Group, and (iii) the Security Working Grou0p, financial assistance being provided for participants from developing countries and certain countries in Europe and Asia to participate in the SCIT plenary session and its working groups. Integration of the PCIPI into the SCIT, and the PCIPI Working Group on Search Information into the IPC Union (under the IPC Committee of Experts). Servicing of the SCIT and its working groups by the Secretariat.

D. Expected Results

The SCIT will facilitate the establishment and operation of the WIPO global information network and the provision of intellectual property information services on the network. The SCIT will facilitate the application of modern information technology for enhanced intellectual property protection and enforcement, especially in WIPO activities supporting the domestic infrastructure for intellectual property offices in developing countries. Note: The activity costs are to be financed from the Special Reserve Fund and will be presented in a separate document.

n1 Adam Smith, The Wealth of Nations: An Inquiry into the Nature and Causes (Modern Library 1994) (1776).

n2 Toward the Era of Intellectual Creation, Challenges for Breakthrough, Report of the Commission on Intellectual Property Rights in the Twenty-first Century to the Commissioner of the Japanese Patent Office (Apr. 7, 1997).

n3 Lester C. Thoreau, Needed: A New System of Intellectual Property Rights, Harv. Bus. Rev., Sept.-Oct. 1997 at 95, 96.

n4 Because patent laws have not yet been harmonized internationally, the patent applications themselves are rarely identical and the search and examination cannot be identical, with the differences, however, serving no real purpose. See, e.g., Robert W. Pritchard, The Future is Now B The Case for Patent Harmonization, 20 N.C.J. Int'l L. & Com. Reg. 291 (1995).

n5 The unnecessarily high costs associated with obtaining multinational patent protection were documented during the International Symposium on Reducing Patent Costs, a conference jointly organized by the Chartered Institute of Patent Agents ("CIPA") and the American Intellectual Property Law Association ("AIPLA"), London, England (Mar. 11-12, 1997).

n6 This vision of a World Patent System, Circa 20XX A.D., was presented to the Giles Sutherland Rich American Inn of Court at the Court of Appeals for the Federal Circuit (May 20, 1997). It was also presented to the Japanese Institute of Intellectual Property ("IIP"), in Tokyo, Japan (June 20, 1997) and published in *30 Forum 24* (IIP, summer 1997).

n7 The Constitution of the United States authorizes Congress "[t]o promote the Progress of . . . useful Arts, by securing for limited Times to ... Inventors the exclusive

Right to their respective . . . Discoveries[.]" U.S. Const. art. I, 8, cl. 8. At the time of the Constitution, "Letters Patent," or open grants from the King, had been authorized in England. Statute of Monopolies of 1623, 21 Jam. 1, ch. 3, 6 (Eng.).

n8 The current text of the Paris Convention is reprinted in Selected Intellectual Property and Unfair Competition Statutes, Regulations and Treaties 805 (Roger E. Schecter ed., West 1997) [hereinafter Selected Intellectual Property Statutes]. Portions of the Patent Cooperation Treaty of June 19, 1970 are also reprinted in Selected Intellectual Property Statutes 700.

n9 See generally Warren S. Wolfeld, Note, International Patent Cooperation: The Next Step, *16 Cornell Int'l L.J. 229 (1983).*

n10 The original signatories to the Paris Convention were Belgium, Brazil, France, Guatemala, Italy, the Netherlands, Portugal, Salvador, Servia, Spain and Switzerland. Gregory W. Hotaling, Comment, Ideal Standard v. IHT: In the European Union, Must a Company Surrender its National Trademark Rights When it Assigns a Trademark?, 19 Fordham Int'l L.J. 1178, 1240 n.365 (1996).

n11 The member states, as of January 31, 1998, are listed in 37 Indus. Prop. & Copyright 40 (1998).

n12 Convention Establishing the World Intellectual Property Organization, July 14, 1967, *21 U.S.T. 1749,* 828 U.N.I.T.S. 3.

n13 For a review of the many important activities of the WIPO, see Gerald J. Mossinghoff & Ralph Oman, The World Intellectual Property Organization: A United Nations Success Story, 160 World Aff. 104 (1997), republished in 79 J. Pat. & Trademark Off. Soc'y 691 (1997).

n14 The member states, as of January 31, 1998, are listed in 37 Indus. Prop. & Copyright 37 (1998).

n15 The member states, as of January 31, 1998, are listed in 37 Indus. Prop. & Copyright 54 (1998).

n16 Patent Cooperation Treaty of June 19, 1970, ch. II, art. 33, cl. 1, reprinted in Selected Intellectual Property Statutes, supra note 8, at 720.

n17 In 1997, U.S. applicants filed 22,736 of the 54,422 PCT international applications B 41.8% of the total B virtually double the number filed in 1992. Lois E. Boland, Future Development of the PCT System: The view of the United States Patent and Trademark Office, Address to the International Symposium on the PCT System in the 21st Century, Beijing, China (Apr. 15-17, 1998).

n18 NAFTA provides an Accession Clause permitting additional countries to join the agreement by unanimous consent of all member countries. Likely candidates include Venezuela, Chile, and Argentina. For an "off-shore" analysis of NAFTA, see Jisu Kim, Perspectives on the North American Free Trade Agreement, Impact on the North American Free Trade Agreement on East Asia: A Korean Perspective, *8 Am. U. J. Int'l L. & Pol'y 881 (1993).*

n19 On an important detail, NAFTA required the United States to change *35 U.S.C. 104* to permit an inventor to prove acts in Canada and Mexico, as well as in the United States, in attempting to prove priority of invention.

n20 For an insightful analysis of the TRIPs negotiations, see Michael P. Ryan, Knowledge Diplomacy, Global Competition and the Politics of Intellectual Property (1998). See also Daniel Gervois, The TRIPs Agreement, Drafting History and Analysis (1998).

n21 Patterned after the NAFTA model, TRIPs required the United States to further amend *35 U.S.C. 104* to permit an inventor to prove acts in all WTO member countries in an attempt to establish priority of invention.

n22 John R. Thomas, Litigation Beyond the Technological Frontier: Comparative Approaches to Multinational Patent Enforcement, *27 Law & Pol'y Int'l Bus., 277, 304 (1996)* (footnotes omitted).

n23 [1995] F.S.R. 325, 328 (U.K. 1995) (quoted in Thomas, supra note 25, at 304). In Coin Control Ltd. v. Suzo Int'l (UK) Ltd., [1997] F.S.R 660 (U.K. 1997), the British court declined to exercise jurisdiction over infringement claims involving alleged infringement of German and Spanish patents in Germany and Spain, respectively. Although it concluded that it would have jurisdiction over infringement claims alone, it held that the issue of the validity of the German and Spanish patents must be decided under the Brussels Convention by local courts.

n24 *F.3d 1368, 30 U.S.P.Q.2d (BNA) 1621 (Fed. Cir. 1994).*

n25 Id. at 1376, 30 U.S.P.Q.2d at 1626.

n26 Convention on the Grant of European Patents, Oct. 5, 1973, *13 I.L.M. 276.* For a description of the major provisions of the EPC and their implementation, see Michael N. Meller, Patenting on the Isar B The Central Procurement of Patents in Europe, 67 J. Pat. & Trademark Off. Soc'y 179 (1985). In 1964, Denmark, Finland, Norway and Sweden signed an agreement to establish a Scandinavian Patent Community ("SPC"). That effort never came to fruition; instead, the Scandinavian countries became members of the EPC.

n27 The 19 member states are Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Hellenic Republic, Ireland, Italy, Lichtenstein, Luxembourg, Monaco, Netherlands, Portugal, Spain, Sweden, Switzerland, and United Kingdom. EPO Member States (visited May 4, 1998) <http://www.european-patent-office.org/epo/members.htm'.

n28 Patents Throughout the World E-21 (Elizabeth Hanellin, 4th ed. 1998).

n29 Id. at A-3.

n30 Id. at A-11.

n31 Of the fifteen independent countries that emerged from the disintegration of the USSR, eleven immediately formed the CIS. They are the Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrzyz Republic, Republic of Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan. Georgia joined the CIS at the end of 1993. Margot Light, Eastern Europe and the Commonwealth of Independent States 1997, Europa Publications Ltd. 23 (3d ed. 1997).

n32 Eurasian Patent Convention, 36 Indus. Prop. & Copyright 30 (1997). The members are Armenia, Azerbaijan, Belarus, Georgia, Kazakstan, Kyrgyzstan, Moldova, the Russian Federation, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. Patents Throughout the World, supra note 31, at app. B-433.

n33 For a comprehensive discussion of the impediments to a global patent system, see Anthony D. Sabatelli & J.C. Rasser, Impediments to Global Patent Law Harmonization, *22 N. Ky. L. Rev. 579 (1995).*

n34 Adoption of NAFTA was seen by one author to lead to the establishment of a North American Patent Office ("NAPO") to serve Canada, Mexico and the United States. Jeffrey L. Thompson, The North American Patent Office? A Comparative Look at the NAFTA, the European Community, and the Community Patent Convention, 27 Geo. Wash. J. Int'l L. & Econ. 501 (1993-94).

n35 At the end of 1997, there were two nations that used the so-called first-to-invent system: the United States and the Philippines. Effective January 1, 1998, under its Republic Act No. 8293, the Philippines adopted a first-to-file system, leaving the United States alone in the world in adhering to a first-to-invent system.

n36 *Metallizing Eng'g Co. v. Kenyon Bearing & Auto Parts Co., 153 F.2d 516, 520, 68 U.S.P.Q. (BNA) 54, 58 (2d Cir. 1946),* cert. denied, *328 U.S. 840, 69 U.S.P.Q. (BNA) 631 (1946).*

n37 "To Promote the Progress of . . . Useful Arts" in an Age of Exploding Technology, Report of the President's Commission on the Patent System, Washington, D.C. (1966). This is not a partisan matter. The 1966 Commission Report was to President Johnson. In August 1992, the Advisory Commission on Patent Law Reform reached virtually identical conclusions in its report to the Secretary of Commerce in the Bush Administration. The Advisory Commission on Patent Law Reform, Report to the Secretary of Commerce (Aug. 1992). For a discussion of the advantages of a first-to-file system, see William S. Thompson, Reforming the Patent System for the 21st Century, 21 Am. Intell. Prop. L. Ass'n Q.J. 171 (1993).

n38 Ian A. Calvert & Michael Sofocleous, Interference Statistics for Fiscal Years 1992 to 1994, 77 J. Pat. & Trademark Off. Soc'y 417 (1995).

n39 H.R. 400 and S. 507, 105th Cong. (1997).

n40 35 U.S.C. ' 111(b) (1994). For a detailed description of the requirements and benefits of a provisional application, see Charles E. Van Horn, Practicalities and Potential Pitfalls When Using Provisional Patent Applications, 22 Am. Intell. Prop. L. Ass'n Q.J. 259 (1994).

n41 35 U.S.C. ' 102(b) (1994); Donald S. Chisum & Michael A. Jacobs, Understanding Intellectual Property Law ' 2C[5][c] (1997 reprint).

n42 For a European view of the advantages of adopting a grace period, see, H. Bardehle, The WIPO Harmonization Treaty and the Grace Period, 30 Indus. Prop. 372 (1991).

n43 Toshiko Takenaka, Interpreting Patent Claims: The United States, Germany and Japan (1995).

n44 Michael N. Meller, Can Europe's Tower of Babel Be Vanquished? 11 WIPO (Mar. 1997).

n45 Alex Y. Seita, Globalization and the Convergence of Values, *30 Cornell Int'l L.J. 429, 455 n.80 (1997).*

n46 Donna E. Cromer, English: The Lingua Franca of International Scientific Communication, 12 Sci. & Technology Lib. 21 (1991).

n47 See discussion infra Parts V.A., V.C., and App. B.

n48 For a comprehensive analysis of international judicial tribunals, see International Courts for the Twenty- First Century (Mark W. Janis, ed., 1992).

n49 A detailed discussion of these matters, as well as those listed below, is well beyond the scope of this article. For an introduction to these matters, see generally Donald S. Chisum & Michael A. Jacobs, Understanding Intellectual Property Law ' 2C (1997).

n50 35 U.S.C. ' 112 (1994).

n51 37 C.F.R. ' 1.56 (1997). See also Harold C. Wegner, Patent Simplification Sans Patent Fraud, 20 Am. Intell. Prop. L. Ass'n Q.J. 211 (1992).

n52 For a discussion of opposition proceedings in the EPO, see Guy Tritton, Intellectual Property in Europe 98 (1996). See also N. Thane Bauz, Reanimating U.S. Patent Reexamination: Recommendations for Change Based Upon a Comparative Study of German Law, *27 Creighton L. Rev. 945 (1994).*

n53 *117 S. Ct 1040, 41 U.S.P.Q.2d. (BNA) 1865 (1997).*

n54 Genentec, Inc v. Sumitomo Seiyaku, Judgment of the Osaka High Court, Hanrei jiho No. 1586, Mar. 29, 1996.

n55 See International Patent Litigation, A Country-by- Country Analysis (Michael N. Meller ed., 1997 Supp.).

n56 Takenaka, supra note 46.

n57 See, e.g., 35 U.S.C. " 154(b), 155, 156, 271(e) (1994).

n58 35 U.S.C. ' 102(b) (1994). For a recent judicial discussion of the on-sale bar, see *Pfaff v. Wells Electronics Inc., 124 F.3d 1429, 43 U.S.P.Q.2d (BNA) 1928 (Fed. Cir. 1997),* cert. granted, *118 S. Ct. 1183 (1998).*

n59 Toward the Era of Intellectual Creation, Challenges for Breakthrough, supra note 2.

n60 Promoting Innovation Through Patents, Green Paper on the Community Patent and the Patent System in Europe, European Commission (1997), available at <http://europa.eu.int/comm/dg15/en/intprop/558/htm.'

n61 Id. at 7.

n62 Pascal Leardini, The European Commission's Green Paper on the Community Patent and the Patent System in Europe, Statement at the Fordham University School of

Law Sixth Annual Conference on International Intellectual Property Law & Policy (Apr. 17, 1998).

n63 On January 29, 1997, then-Secretary of Commerce, Ronald H. Brown, stated that while "other international negotiations continue, [the United States] will maintain our first-to-invent system, while keeping open the option of full patent harmonization in the future." Pritchard, supra note 4, at 291.

n64 Boland, supra note 17.