

**MEETING OF CONSULTANTS
ON INVENTIONS MADE OR USED IN OUTER SPACE**

Geneva, March 6 and 7, 1997

Discussion paper prepared by the International Bureau

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INTRODUCTION

1. The Program and Budget of WIPO for the 1996-97 biennium (document AB/XXVI/2) provides, in Item 03(11), the following mandate:

“The International Bureau will study, and it will prepare, convene and service a meeting of consultants in each year of the biennium to study, the desirability and feasibility of adopting rules and/or recommending principles, common to all countries and interested intergovernmental organizations, for the intellectual property protection of inventions and literary and artistic works which were created or are used in outer space.”

2. To implement this mandate, the International Bureau of WIPO submitted, in April 1996, an outline of questions to experts in this area (see Annex I). The International Bureau received comments from three such experts (see Annex II).

3. Taking into account the comments received, the International Bureau prepared a draft study which is contained in Annex III.

[Annexes follow]

ANNEX I

OUTLINE OF QUESTIONS TO BE STUDIED CONCERNING THE PROTECTION OF INTELLECTUAL PROPERTY CREATED OR USED IN OUTER SPACE PREPARED BY THE INTERNATIONAL BUREAU OF WIPO

1. Outer space activities are characterized, in particular, by the utilization of sophisticated technology in respect of which protection of intellectual property plays an important role, and by the fact that national law, in principle, only applies to the territory (including air space) of a country and not to outer space. In order to meet the special requirements that arise from activities relating to outer space with respect to the protection of intellectual property, a study is being prepared with the aim of making recommendations for rules and/or principles, common to all countries and interested intergovernmental organizations, on the protection of intellectual property in the field of inventions and literary and artistic works including databases which were created or are used in outer space. The study should, in particular, cover such rights as patents, integrated circuit layout-design rights, copyrights, and the protection of trade secrets.
2. The study should be based on existing legal protection of intellectual property both at national and international levels, and on existing international treaties and agreements in the field of outer space activities. It should also take into account other relevant international treaties and agreements such as the Paris Convention for the Protection of Industrial Property, the Berne Convention for the Protection of Literary and Artistic Works and the Agreement on Trade-Related Aspects of Intellectual Property Rights (“TRIPS Agreement”). Furthermore, the study should take into consideration international public law in respect of activities carried out in different countries.
3. In preparing the study, a distinction should be made between activities carried out in outer space and activities relating to outer space which are carried out on the territory of a country or on the territories of several countries.
4. The study should establish principles that clarify when activities with regard to intellectual property are deemed to be carried out in outer space rather than in the territory of a country where national laws on protection of intellectual property apply. Such principles may include references to existing principles on, for example, altitude, or existing definitions under international public law used in different contexts specifying what is regarded as outer space.
5. Since national (and regional) laws on the protection of intellectual property in general apply only to the territory of a country (or a region), the study should seek to establish principles on the application of these laws to intellectual property created or used in outer space. These principles should, in particular, ensure that adequate protection is given to intellectual property created in outer space, that the legal rights conferred by national law on protection of intellectual property can still be exercised in respect of, for example, a patent used in outer space and that liability for infringing intellectual property rights in outer space is upheld. In this regard, particular consideration should be given to whether, for example, a spacecraft or space station could be deemed as part of the “territory” of a country.

6. Additional consideration should be given to joint governmental administration of spacecraft, space stations, etc., where specific problems concerning protection of intellectual property may arise as a result of the activities carried out on the spacecraft or space station. As technology used on a space station is potentially liable to infringe, for example, existing patents of third parties, recommendations should be made with respect to the ways and means the right holders of such patents can assert their rights against the governments responsible.

7. The study should further provide recommendations in areas where rules and/or principles, in particular, are required because of the special circumstances (outer space) under which objects of intellectual property, such as inventions and works, are created or used. In this regard, the study should specifically deal with the following questions:

(a) Should rights in respect of intellectual property continue to vest in a contractor of a government who has, for example, made an invention or created a work, or should such rights be automatically vested in the government responsible for the space activity? Would licensing agreements provide an appropriate legal framework in this connection? How should these questions be approached in the case where the invention or work was created by several contractors in more than one country and the activity is carried out in cooperation among several governments?

(b) What are the implications of the existing different patent systems concerning the principles of first-to-file and first-to-invent? Where, under the first-to-invent principle, an experiment for an invention requires testing in outer space, should the invention be considered to have been made in outer space?

(c) What are the issues regarding the protection of databases created in outer space which contain remote sensing data, and photographs taken in outer space? Here, the question may arise concerning the extent to which human intervention has been involved.

(d) According to Articles 41 and 61 of the TRIPS Agreement, Members are obliged to ensure that enforcement procedures are available to permit effective action against any act of infringement of intellectual property covered by the Agreement, including patents, trade secrets and copyrights, and to provide for criminal procedures and penalties to be applied, in particular, in respect of copyright piracy. What is the impact of these obligations with regard to intellectual property created or used in outer space?

(e) Are special recommendations to be made on dispute settlement procedures, including arbitration procedures?

(f) With regard to outer space related activities carried out on the territory of a country or of several countries, what is the applicable law in the case where such activities have an effect in a country other than the country or countries in which the said activities are carried out? For example, where satellite broadcasting originates in a country other than the country controlling the satellite, which country's law applies to the broadcasting?

(g) Can the doctrine of temporary presence under Article *5ter* of the Paris Convention for the Protection of Industrial Property be applied to outer space activities carried out among several countries?

[Annex II follows]

ANNEX II

COMMENTS RECEIVED FROM EXPERTS ON THE OUTLINE PREPARED BY THE INTERNATIONAL BUREAU

A. COMMENTS BY ANNA-MARIA BALSANO, OFFICE OF LEGAL AFFAIRS, EUROPEAN SPACE AGENCY (ESA)

1. Existing legal protection of intellectual property, both at national and international level and existing treaties and agreements in the field of outer space activities.

1.1 Convention for the Protection of Industrial Property Rights signed in Paris on March 20, 1883, as last revised on July 14, 1967 (Paris Convention).

Of specific importance for space activities is the provision on patents in international traffic. Since Article 5^{ter} only mentions vessels, air craft or land vehicles, space objects which cannot be classified as such do not fall under this provision.

The temporary presence of elements of a space station for the purpose of launching, or their return in a foreign country, will therefore not automatically be exempted from the exclusive rights of a patentee over patents protected in that foreign country.

Even if the provision would apply to (elements of) a space station, it is still doubtful whether the use of patented inventions onboard space stations would fall under “operational needs”.

1.2 Patent Cooperation Treaty of June 19, 1970 (PCT).

The PCT only provides a simple means of preserving patent rights in all countries that are active in space exploration and does not affect as such the protection of intellectual property in space.

1.3 Agreement on Trade-Related Aspects of Intellectual Property Rights, Including Trade in Counterfeit Goods (TRIPS Agreement), part of the GATT Uruguay Round signed in April 1994.

The TRIPS Agreement does not have a huge impact on patent legislation of countries which are already party to the Paris Convention. Since all EC countries and the other main space faring countries are parties to the Paris Convention, the effect of the TRIPS Agreement is minimal for EC Member States.

Advantages of the TRIPS Agreement, however, are:

(a) the harmonizing effect with the United States patent law and the other countries examined in this Study concerning the place of invention;

(b) the enumeration of protected acts which includes the importation of patented goods and processes;

- (c) the conditions for compulsory licenses.

Another important advantage is the dispute settlement which could result in a worldwide similar interpretation of the provisions of the Paris Convention which constitute uncertainty nowadays. For example, the term “vessels” in the temporary presence provision could be clarified by a panel so as to include spacecraft. However, this does not include Russia as one of the main spacefaring nations not yet members of the WTO.

1.4 European Patent Convention (EPC).

Under the EPC, the place where the invention was created is not relevant for granting a European patent. Therefore, the EPC would apply to inventions created in outer space. The production on a large scale in outer space, of products which would not be possible on earth, would not contravene the non-obviousness requirement under the EPC. As infringements are dealt with by national law, for infringement of inventions in outer space the national rules regarding infringements have to be observed. The question whether national patent laws provide for their applicability in outer space is not dealt with in the EPC.

1.5 Convention for the European Patent for the Common Market, signed in Luxembourg on December 15, 1975, as amended on December 15, 1989 (Community Patent Convention, CPC).

The substantive law of the CPC mainly concerns the effects of patents granted under the EPC. The rights of the patentee are broadly described (direct and indirect use), so that it may be argued that a broad protection has been intended. With regard to the territorial application, the Agreement expressly provides its applicability to the sea and submarine areas. The fact that the air space above the territory has not expressly been mentioned can probably be explained by the assumption that States have, in any case, sovereign rights or jurisdiction in that area.

As the CPC was signed in 1989, it might be argued that it was not supposed to apply to outer space. Also, with regard to the temporary presence provisions, registered space objects have not been mentioned. This could be seen as an argument that the exception does not apply to such objects.

2. Distinction between activities carried out in outer space and activities relating to outer space which are carried out on the territory of a country or several countries.
3. Principles that clarify when activities with regard to intellectual property are deemed to be carried out in outer space rather than in the territory where national laws on protection of intellectual property apply. This includes the question “what is considered to be outer space.”

What is to be understood by the term “outer space”? As commonly known, there is no legally accepted boundary between air space and outer space. The space treaties do not provide any. In legal terms outer space can only be negatively defined. It is a space beyond the atmosphere surrounding the earth where air law does not apply. In practice, however, it is generally accepted that outer space starts at the lowest possible orbit of a satellite which is at this moment at an attitude of between 80 and 120 kilometers. The delimitation of outer space

is therefore more an academic issue (although it is still on the agenda of UNCOPUOS without any tangible results for the last ten years) and is being overhauled by state practice.

4. Extra-territorial application of national laws and the question whether space craft or a space station can be deemed as part of the territory of a country.

When we analyze the national patent laws of the European countries we see that these laws have been harmonized to a large extent. However, none of the laws have been made specifically applicable to outer space or to space objects registered by the countries. In some countries one could try to reason for an applicability of the national patent law to registered space objects by assuming a very broad concept of territoriality. This presumption is at the best uncertain and as a consequence the protection of European patents in outer space is questionable.

Some uses—like experimental and scientific uses, which are and will be the main purposes of manned space stations—are in all European systems excluded from the exclusive right of the patentee. European patent laws also provide for partly protection of the use of a patent in outer space in case of contributory infringement. A compulsory license for the use of patents could only be a solution for a lawful use in outer space again the national law is applicable in outer space.

In contrast to the European countries, the United States Patent Law clearly provides for its applicability to United States registered space objects. The United States of America thus avoided any discussion on patentability of inventions made in outer space and on the protection of United States patents in outer space.

5. International cooperative space activities, for example on board the space station and the protection of the right holders against infringements.

Space Station is a very specific example of an international cooperative activity and one can wonder what the influence of the IGA will be on the general regime concerning intellectual properties in outer space. The IGA provides for special rules for intellectual property. Article 21, Paragraph 2 of the IGA stipulates that any activity occurring in or on a space station flight element shall be deemed to have occurred in the territory of the partner state which has registered that element. Thus each partner extends the scope of application of its patent law to the element it provides. Concerning ESA-registered elements, any European partner state may deem the activity to have occurred within its territory. The United States Patent in Space Act raised a lot of concern during the IGA negotiations and the European representatives were especially drawing attention to the wording of the United States amendment which spoke of “jurisdiction or control” which was different from the Article VIII of the Outer Space Treaty which uses the words ‘jurisdiction and control’. The question was raised why the United States deviated from the wording of the space treaties and what the significance was of the using of the word “or” instead of “and.”¹ Especially as it becomes clear from the IGA that the space treaties are confirmed as the primary source regulating the

¹ See: amongst others, G. Lafferranderie, “Proposed Patent in Space Legislation,” in *Journal of Space Law*, Vol. 18, No. 1, 1990.

activities which will be carried out.² During the discussions European representatives feared that “or” would mean a simple (technical) control and thus when using United States facilities (NASA tracking facilities) United States jurisdiction would be enforceable. It then later was clarified that this wording was only used to avoid the non-application of United States jurisdiction on sub-orbital flights. Of course at this moment it is clear that the problem of jurisdiction in connection with a non-United States space activity can only occur when the foreign space object has not been registered by any state. With respect to jurisdiction in general the IGA provides that each partner will have jurisdiction over its own registered element.³

A good example of a cooperation agreement is the Russian/ESA Agreement for delivery of some elements for the space station (ESA/RKA Agreement). In this agreement the article on Intellectual Property provides that:

“(1) Except as provided hereafter, all Intellectual Property conceived or developed solely by either Party, or either Party’s support institutes, contractors and subcontractors in the performance of this Agreement, shall be owned by such Party or by its support institutes, contractors and subcontractors.

“(2) The Parties agree to give each other the free right to have access to and use of any intellectual property developed under this Agreement for the exclusive purpose of performing their respective obligations under this Arrangement, including that related to the design and development phases of the system, without the right of reproduction, unless otherwise provided in this Arrangement or in other separate arrangements to be agreed by the Parties. Such access and use shall be accorded by the Parties a high level of confidentiality in accordance with Article 14, above.

“(3) Any invention based on the data resulting from the testing assembly, use and in-flight operation involving the..... system or the analysis thereof, shall be the property of the Party whose intellectual effort has produced the data or has made a major contribution to this invention or, as the case may be, of that Party’s support institutes, contractors and subcontractors.”

ESA and RKA shall be entitled to a free of charge, non-exclusive, irrevocable license to use the invention produced by the support institutes, contractors or sub-contractors, for their own programs in the field of space research and technology and their space applications without the right to give sub-licenses for purposes other than the above programs.”

In general, however, contractual agreements will secure the intellectual property of the parties involved.

² Article 2(1) IGA.

³ Article 5(2) IGA.

6. Recommendations for rules and principles to be developed for intellectual property and space.

(a) Rights in governments or in industries? role of license agreements? makes a difference whether inventive activity is carried out in space?

When we look at ESA practice, but also at NASA practice, we see that most of contracted research will vest rights resulting from the contract in the industries. This is to stimulate industries and private sector to exploit the result. The Agencies retain a free license to use the rights for its own (R&D) purposes. For ESA the other member state's industries have the right to use the technology for space applications. It does not matter so much whether inventive activity is carried out in outer space (apart from the problem of applicability of national laws in outer space), in practice the inventive activities in outer space are carried out by astronauts who are employed by the Agencies. Staff rules do apply here.

(b) Implications of first-to-file versus first-to-invent?

First-to-File/First-to-Invent System

With regard to the application of a patent, in a first-to-file-system the place of invention is not considered relevant. The place of invention as such would also not be relevant in countries with a first-to-invent system-according to which the person who was the first to invent has a right to a patent. A first-to-invent system can actually only be found in two countries in the world, the United States and the Philippines. With regard to outer space activities therefore up to now only the United States patent system is relevant for this difference. In the United States, the first-to-invent system used to be linked to a provision that an invention made abroad is not acknowledged for the time of an invention. Therefore, the place of an invention used to be relevant in the United States' first-to-invent system. With regard to outer space activities conducted with the United States, the difference could for example have favored inventions made on the United States module above inventions made on foreign modules in applying for patent protection in the United States, as inventions made on foreign modules could be considered as inventions made abroad.

Another question was whether an invention in outer space would constitute "an invention made abroad."

As a consequence of the TRIPS Agreement which prohibits discrimination as to the place of invention, the United States patent law is now recognizing inventive activity in countries party to the TRIPS Agreement. The main differences between a first-to-file and a first-to-invent system have therefore been mitigated by the TRIPS Agreement.

(c) Issue protection of databases created in outer space, remote sensing and photos.

(d) Impact of TRIPS? See (b), above.

(e) Dispute settlement procedures, including arbitration.

(f) Effect of Space activities, for example, satellite broadcasts originating from another than the country controlling the satellite. Which law applies?

In the European Community the law of the broadcasting entity applies. Otherwise, risk of a multitude of conflicting laws and interests and in practice a risk of hampering the development of satellite broadcasts.

B. COMMENTS BY JOHN G. MANNIX, ASSOCIATE GENERAL COUNSEL
(INTELLECTUAL PROPERTY), NATIONAL AERONAUTICS AND SPACE AGENCY (NASA),
UNITED STATES OF AMERICA

1. The comments which follow are my personal views and not an official position of either the United States Government or NASA. As you are aware, many of the issues outlined in your questions to be studied have already arisen in negotiations on the International Space Station and in formulating our Earth Observing System program. The first five questions in your outline relate to the issue of how to treat the creation and enforcement of intellectual property rights in outer space. Two sub-issues under this topic concern how national laws and international treaties affect this issue and whether a new form of intellectual property in databases should be created.

2. As you know, this issue was discussed extensively when NASA was in the early stages of planning for the Space Station. Based on input from this Agency, the United States Congress passed Public Law 101-580 in November 1990. This created a statute, 35 U.S.C. § 105 which states the following:

§ 105 Inventions in Outer Space

3. (a) Any invention made, used, or sold in outer space on a space object or component thereof under the jurisdiction or control of the United States shall be considered to be made, used, or sold within the United States for the purposes of this title, except with respect to any space object or component thereof that is specifically identified and otherwise provided for by an international agreement to which the United States is a party, or with respect to any space object or component thereof that is carried on the registry of a foreign state in accordance with the Convention on Registration of Object Launched into Outer Space.

(b) Any invention made, used, or sold in outer space on a space object or component thereof that is carried on the registry of a foreign state in accordance with the Convention on Registration of Objects Launched into Outer Space, shall be considered to be made, used, or sold within the United States for the purposes of this title if specifically so agreed in an international agreement between the United States and the state of registry.

4. This statute provides that any invention made on a space object under the jurisdiction and control of the United States, would be treated as if it were made within the borders of the United States. This allows anyone, whether United States citizen or not, to avail themselves of the United States patent system as if their invention were made on a United States controlled space object. This statute also addresses the issue of infringement by stating that an invention used or sold on a space object under the jurisdiction of the United States will be treated as if it were an infringement within the United States. It would appear to me that a statute similar to this could be enacted by each national space faring nation to cover inventions on space objects within their control. As long as each space object is registered to a national country then the protection would be very straight forward. I believe that on the international space station, the module under the control of the United States would be covered by this statute. Obviously, modules under the control of other nationals would not automatically be covered by this statute. In addition, paragraph (b) of this statute addresses the issue of invention made, used, or sold in outer space on a space object in the registry of a

country other than the United States. If the United States and the other country agree in an international agreement, the invention made on the other country's registered object can be considered to be made, used, or sold within the United States.

5. There may be other ways of approaching a solution to the above stated issue, but this type of legislation appears to be very simple and clean. I would be very interested if other commentators have a different opinion on this approach.

6. I would also like to comment on the reference in question 2 to the agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS Agreement). In some recent negotiations in which NASA has been involved, there has been an attempt to take Article 39 entitled Protection of Undisclosed Information and insert it in intellectual property sections of other agreements. I have a concern with taking a clause from a trade agreement and inserting it into an intellectual property agreement without close analysis of the aspects of the clause that were unique to a trade agreement. In order to protect undisclosed information under United States law, we must look to our statutes on trade secrets. We do not have a national trade secret law. This aspect of intellectual property is covered by state law and as such there are slight variations among the States as to the exact coverage for trade secret information. The general definition recognized by most States is that a trade secret includes any formula, pattern, device, or compilation of information which is used in one's business and which gives one an opportunity to obtain an advantage over competitors who do not know or use it. The key to trade secret law in the United States is that the information is used in one's business to obtain an advantage over competitors. As I read Article 39 of the TRIPS Agreement, I see no mention of the fact that the information is used in one's business. This may be due to the fact that the clause is included in a trade agreement, which by its very nature assumes a business purpose. The TRIPS Agreement also states that the "information has commercial value because it is secret." This is also somewhat at odds with the basic understanding in the United States that trade secret information must possess business value, not simply be a secret. Information which is secret, but does not entail "business information which gives one an advantage over their competitors" would generally not qualify as a trade secret in the United States. This issue of trade secret information has become more and more important in some of the recent negotiations in which NASA has been involved. Because of this fact, I believe it would be useful for your group to spend more time studying this issue.

7. Another issue which is mentioned, but not discussed in your outline is the issue of creating a new form of intellectual property for databases. Since this topic is going to be discussed extensively at the Diplomatic Conference On Certain Copyright and Neighboring Rights Questions held in Geneva from December 2 to 20, 1996, it may not be appropriate to spend a significant amount of time on this issue in your study. But, I should mention that this proposed Treaty would appear to have significant impact on the free exchange of scientific data. I believe that considerable discussion and further understanding of the impact of this Treaty is necessary.

8. With respect to question 7(a), the vesting of title in an invention created by a contractor employee under a contract with NASA depends on the size of the contractor. For a small business, the contractor can elect to obtain title to the invention. With respect to large contractors, the title would automatically vest with NASA, but the contractor could request that NASA waive title to the invention and leave title with the contractor. NASA would generally waive title to the contractor where the contractor has shown that they are willing and capable of commercializing the invention. Since NASA is not in the business of manufacturing commercial products, we encourage our contractors to make commercial use of inventions created under our contracts. But, we always obtain a license for governmental purposes which includes procurement of the items. Where the invention is made by more than one inventor working for different companies or one inventor working for a company and another working for the United States Government, we have a joint inventorship situation. Under United States law, each of the entities would have an undivided interest in the invention. Arrangements are then usually negotiated for joint custody of the invention.

9. With respect to question 7(b), under our current "first to invent" system, there must be a reduction to practice of the invention. There can be a constructive reduction to practice by filing a patent application in the United States Patent Office or an actual reduction to practice by making and using the invention. Under 35 U.S.C. § 106, if this reduction to practice occurred in space on a United States controlled object, it would be considered a reduction to practice within the United States.

10. With respect to question 7(c), our Mission to Planet Earth program is based upon the twin principles of "Open Skies" and "Nondiscriminatory Availability of Data". "Open Skies" refers to the right of a country with ownership of an Earth Remote Sensing Satellite to collect and subsequently distribute data taken from space even if the data requires operations in space over territory situated outside national boundaries. The United States position on "Open Skies" was reaffirmed in the 1967 Outer Space Treaty. Article 2 states that "outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means." In accordance with the requirement in the Space Act to "provide the widest, practicable, and appropriate dissemination of information concerning its activities and results thereof," NASA has taken the position that its land sensing data shall be available to all users at the cost of fulfilling user requests. I am sure that this policy will be discussed extensively in connection with the proposal to provide for a new form of intellectual property in databases during the diplomatic conference in Geneva in December.

11. With respect to question 7(d), I believe that this is covered by 35 U.S.C. § 105, which has been discussed above.

12. With respect to question 7(e), I am not sure of the dispute settlement procedures referred to in this question.

13. With respect to question 7(f), if a satellite broadcast was infringing a copyright and being broadcast into other countries, I assume that the infringers could be sued for copyright infringement in those countries where the broadcast was received. 35 U.S.C. § 105 applies only to patent infringement. It has not been extended to cover copyright infringement emanating from a United States controlled satellite.

14. With respect to question 7(g), since 35 U.S.C. § 105 equates any activity taking place on a space object under the control of the United States to be the same as if that activity took place within the borders of the United States, the doctrine of temporary presence which applies in the United States should apply to the space object under United States jurisdiction. This issue has obviously never been litigated, but I believe that a reasonable interpretation of the intent of 35 U.S.C. § 105 would lead to this conclusion. The intent of 35 U.S.C. § 105 was simply to state that the patent laws which apply to the territorial boundaries of the United States shall also apply to a space object under the jurisdiction and control of the United States.

C. COMMENTS BY MASAHIRO SAITO, DEPUTY MANAGER, INTERNATIONAL AFFAIRS DIVISION AND TECHNICAL INFORMATION DIVISION, NATIONAL SPACE DEVELOPMENT AGENCY (NASDA), JAPAN

1. The following are our comments to the list of questions prepared by the International Bureau entitled “Outline of Questions to be Studied Concerning the Protection of Intellectual Property Created or Used in Outer Space.”

2. Because of the respectable differences which exists among related countries, it looks difficult to decide everything in the short term. We also think it necessary to observe the existing negotiations between countries. Rules which are to be brought about by this kind of study should not be too restrictive to space activities of related countries or to international cooperation, but should be based on the cooperative decision made out of international community. What we mean here is that it should not be an opinion representing our country. It is necessary to WIPO to make the points and the outline of this study much clearer before the meeting.

3. We still need to study some problems such as the legal status of remote sensing data or the incompatibility between countries of how to apply a convention to their own national legal systems. At the same time, considering the rapid progress in the United States case law and in European discussion on these topics, we should discuss each case such as “temporary presence doctrine,” or “satellite broadcasting.” (There is “temporary presence doctrine” in Article 69 of the Patent Law of Japan, but different from the corresponding Article of the Paris Convention, there is no “vehicle” word).

4. We would like to refer to the unique feature of Japan concerning the law of intellectual properties related to outer space. Different from European countries and the United States, there are not enough scholars studying these kind of legal problems in Japan, and not too many Japanese publications on these topics. Japan is behind in the national legislation in space law when compared with other countries engaged in space development activities. And different from European countries and the United States, more strictly peaceful use of national intellectual property is required in Japan and such use must be principally charged. Therefore, we must be very careful of how to deal with our intellectual properties. When discussing, we expect some attention to be paid for the above-mentioned features of Japan.

[Annex III follows]

ANNEX III

DRAFT STUDY BY THE INTERNATIONAL BUREAU

A. INTRODUCTION

1. The present draft study by the International Bureau is based on the responses provided by experts from the European Space Agency (ESA), the National Aeronautics and Space Administration (NASA) (United States of America) and the National Space Development Agency (NASDA) (Japan). Following Annex III are Appendices containing the relevant provisions of national laws and international treaties.

B. SCOPE OF STUDY

2. WIPO's study was intended to cover inventions as well as literary and artistic works, including computer programs, which are created or used in outer space. In particular, the study was to cover such rights as patents, integrated circuit layout-designs (topographies), copyrights and neighboring rights, and the protection of trade secrets. No comments were made by the experts on the scope of the Study.

3. Since the issues in the area of copyright concern a number of special questions such as satellite transmission of protected works, the scope of the present study is limited to industrial property aspects (patents and layout-designs (topographies) of integrated circuits). Moreover, among the forms of protection intended to be studied was the protection of databases, in particular earth observation data, and satellite transmissions of such data. However, the discussion of these topics in the present context appears to be premature for current consideration.

4. Finally, the present study also initially included a review of the protection of satellite broadcasting, which is provided for by the Brussels Convention Relating to the Distribution of Programme-Carrying Signals Transmitted by Satellite (1974). However, following closer analysis, it was determined that, inasmuch as a satellite transmitting signals is merely a conduit for Earth-based receivers, this seems to constitute use on Earth, not in outer space. Accordingly, the question of the protection of satellite broadcasting was not considered in the present study.

C. SPECIAL LEGISLATIVE AND TREATY PROVISIONS

(a) Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies (1967 Outer Space Treaty) and other conventions relevant for space activities

5. In order to examine whether special considerations apply to activities in outer space justifying a need for adaptation or exceptions from the general rules on industrial property protection, one has to take into account the general principles applicable in international outer space law.

6. The progressive development of international law constitutes one of the principal functions of the United Nations in the legal field. An important step towards the elaboration of international agreements in the field of outer space was the adoption in 1963 of the Declaration, by the United Nations General Assembly, of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space.⁴ This Declaration was the basis for the adoption of the 1967 Outer Space Treaty.⁵ This Treaty provides for the general legal framework for the peaceful uses of outer space. It should be noted that no provision of the Outer Space Treaty deals with intellectual property.

7. Article 1 of the 1967 Outer Space Treaty provides what is known as the “Space Benefits” clause:

“The exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind.

“Outer space, including the moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies.”

8. Article 2 of the 1967 Outer Space Treaty states:

“Outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.”

⁴ This Declaration was adopted on December 13, 1963 (G.A. Res. 27/92). See Appendix VII.

⁵ The Outer Space Treaty was adopted on December 29, 1966, was opened for signature on January 27, 1967, and entered into force on October 10, 1967. For the whole text see Appendix I.

9. Article 13 of the 1967 Outer Space Treaty states that:

“The provisions of this Treaty shall apply to the activities of States Parties to the Treaty in the exploration and use of outer space, including the moon and other celestial bodies, whether such activities are carried on by a single State Party to the Treaty or jointly with other States, including cases where they are carried on within the framework of international intergovernmental organizations.

“Any practical questions arising in connection with activities carried on by international intergovernmental organizations in the exploration and use of outer space, including the moon and other celestial bodies, shall be resolved by the States Parties to the Treaty either with the appropriate international organization or with one or more States members of that international organization, which are Parties to this Treaty.”

10. The following other conventions are relevant for space activities:

- *Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space* (1968 Rescue Agreement);⁶

- *Convention on International Liability for the Damage Caused by Space Objects* (1972 Liability Convention);⁷

- *Convention on Registration of Objects Launched into Outer Space* (1975 Registration Convention);⁸

- *Agreement Governing the Activities of States on the Moon and Other Celestial Bodies* (1979 Moon Agreement).⁹

⁶ Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, adopted on December 19, 1966, opened for signature on April 22, 1968, entry into force on December 3, 1968.

⁷ Convention on International Liability for the Damage Caused by Space Objects, adopted on November 29, 1971, opened for signature on March 29, 1972, entry into force on September 1, 1972.

⁸ Convention on Registration of Objects Launched into Outer Space, adopted on November 12, 1974, opened for signature on January 14, 1975, entry into force on September 15, 1976.

⁹ Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, adopted on December 5, 1979, opened for signature on December 18, 1979, entry into force on July 11, 1984.

(b) Declaration, by the United Nations Committee on the Peaceful Uses of Outer Space, on International Cooperation in the Exploration and Use of the Outer Space for the Benefit and the Interests of All States, Taking into Particular Account the Needs of Developing Countries¹⁰

11. As it is only recently that human activities in the outer space have become realities, this has created the need to elaborate additional legal principles to facilitate international relations in outer space.

12. Of particular interest regarding intellectual property is the above mentioned Declaration by the United Nations Committee on the Peaceful Uses of Outer Space. Its second paragraph states:

“States are free to determine all aspects of their participation in international cooperation in the exploration and use of outer space on an equitable and mutually acceptable basis. Contractual terms in such cooperative ventures should be fair and reasonable and they should be in full compliance with the legitimate rights and interests of the parties concerned as, for example, with intellectual property rights.”

13. Paragraph 5 reads as follows:

“International cooperation, while taking into particular account the needs of developing countries, should aim, *inter alia*, at the following goals considering their need for technical assistance and rational and efficient allocation of financial and technical resources:

(a) Promoting the development of space science and technology and of its applications;

(b) Fostering the development of relevant and appropriate space capabilities in interested States;

(c) Facilitating the exchange of expertise and technology among States on a mutually acceptable basis.”

(c) The Paris Convention for the Protection of Industrial Property (1967)

14. The Paris Convention for the Protection of Industrial Property (hereinafter referred to as the “Paris Convention”), which is the basic international treaty in the field of industrial property, does not expressly consider the question of inventions in outer space. However, it contains provisions establishing the national treatment principle (Article 2), the right of priority (Article 4) and the independence of patents (Article 4*bis*), and common rules that are also applicable to the patentability of inventions made in a spacecraft or space station.

¹⁰ A/AC.105/L.211, June 11, 1996. See Appendix VI.

15. Of special interest for this study, as far as infringement is concerned, is Article 5^{ter} of the Paris Convention, which provides that there is no infringement of the rights of a patentee in case of:

“1. the use on board vessels of other countries of the Union of devices forming the subject of his patent in the body of the vessel, in the machinery, tackle, gear and other accessories, when such vessels temporarily or accidentally enter the waters of the said country, provided that such devices are used there exclusively for the needs of the vessel;

“2. the use of devices forming the subject of the patent in the construction or operation of aircraft or land vehicles of other countries of the Union, or of accessories of such aircraft or land vehicles, when those aircraft or land vehicles temporarily or accidentally enter the said country.”¹¹

16. This matter will be further considered in paragraphs 56 to 60, below.

(d) The Agreement on Trade-Related Aspects of Intellectual Property Rights (“TRIPS Agreement”)

17. The Agreement on Trade-Related Aspects of Intellectual Property Rights (“TRIPS Agreement”) does not consider the question of outer space, but several of its provisions, like Article 3 (national treatment), Article 4 (most-favored national treatment) and Part III (enforcement), have some impact on space activities. These and other provisions of the TRIPS Agreement apply to the protection of inventions and layout-designs (topographies) of integrated circuits made in a spacecraft or space station.

(e) Section 105 of the United States Code, Title 35-Patents

18. The United States of America is the only space-faring nation with a provision in respect of inventions related to outer space. Section 105¹² of 35 U.S.C. reads as follows:

“35 U.S.C. 105 *Inventions in outer space.* (a) Any invention made, used, or sold in outer space on a space object or component thereof under the jurisdiction or control of the United States shall be considered to be made, used or sold within the United States for the purposes of this title, except with respect to any space object or component thereof that is specifically identified and otherwise provided for by an international agreement to which the United States is a party, or with respect to any space object or component thereof that is carried on the registry of a foreign state in accordance with the Convention on Registration of Objects Launched into Outer Space.

¹¹ See Article 5^{ter} of the Paris Convention in Appendix II.

¹² See Appendix III reproducing Chapter 10 (entitled “Patentability of Inventions”) of 35 U.S.C.

(b) Any invention made, used, or sold in outer space on a space object or component thereof that is carried on the registry of a foreign state in accordance with the Convention on Registration of Objects Launched into Outer Space, shall be considered to be made, used, or sold within the United States for the purposes of this title if specifically so agreed in an international agreement between the United States and the state of registry.”

(f) Agreement on Cooperation on Manned Space Infrastructure and Space Transport Systems During the Period 1993-1995 Between the European Space Agency and the Russian Space Agency (1994 Agreement ESA/RKA)¹³

19. One expert mentioned that the Agreement signed between the European Space Agency and the Russian Space Agency for delivery of some elements for the space station is a good example of a cooperation agreement which includes relevant provisions on intellectual property.

20. Of special interest for this study are the clauses on conditions concerning intellectual property. These clauses deal with ownership, rights of use, rights of distribution and licensing of data and information capable of legal protection, including an additional clause on confidentiality.¹⁴

D. DISTINCTIONS BETWEEN ACTIVITIES CARRIED OUT IN OUTER SPACE AND ACTIVITIES RELATING TO OUTER SPACE

21. In preparing the study, it was suggested that a distinction be made between activities carried out in outer space and activities relating to outer space which are carried out on the territory of a country or on the territories of several countries in which national laws on protection of intellectual property apply. In studying the issue, it was determined that the distinction was relevant only in so far as activities relating to outer space may have such an effect in outer space that they are comparable to activities in outer space to that extent.

¹³ The ESA/RKA Agreement was signed in Moscow on October 5, 1994. See article 8 of the ESA/RKA Agreement in Appendix V.

¹⁴ See Appendix V: Annex 6 to the ESA/RKA Agreement, *Special Conditions Concerning Intellectual Property and Associated Rights for Study, Research and Development Contracts* and Article 16 of the Arrangement Between the European Space Agency and the Russian Space Agency Concerning Cooperation in the Development and Operations of the European Robotic Arm (ERA) for the Russian Segment of the International Space Station (ISS), which is also an Annex to the ESA/RKA Agreement.

E. PRINCIPLES CLARIFYING WHEN ACTIVITIES WITH REGARD TO INTELLECTUAL PROPERTY ARE DEEMED TO BE CARRIED OUT IN OUTER SPACE

22. Since national (and regional) laws on the protection of intellectual property in general apply only to the territory of a country (or a region), the study should seek to establish principles on the application of these laws to intellectual property created or used in outer space. These principles should, in particular, ensure that adequate protection is given to intellectual property created in outer space, that the legal rights conferred by national law on protection of intellectual property can still be exercised in respect of, for example, a patent used in outer space and that liability for infringing intellectual property rights in outer space is upheld. In this regard, particular consideration should be given to whether, for example, a spacecraft or space station could be deemed as part of the “territory” of a country.

23. The following legal and Treaty provisions dealing with questions of jurisdiction will provide some understanding on the key legal issues to determine if a spacecraft or space station falls under the jurisdiction of a country.

24. Paragraph 7 of the 1963 UN Declaration¹⁵ introduced the legal principle of jurisdiction and control of a registered object launched into outer space:

“The State on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and any personnel thereon, while in outer space. Ownership of objects launched into outer space, and of their component parts, is not affected by their passage through outer space or by their return to the earth. Such objects or component parts found beyond the limits of the State of registry shall be returned to that State, which shall furnish identifying data upon request prior to return.”

25. The above mentioned principle was incorporated with few modifications in Article 8 of the 1967 Outer Space Treaty:

“A State Party to the Treaty on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof, while in outer space or on a celestial body. Ownership of objects launched into outer space, including objects landed or constructed on a celestial body, and of their component parts, is not affected by their presence in outer space or on a celestial body or by their return to the Earth. Such objects or component parts found beyond the limits of the State Party to the Treaty on whose registry they are carried shall be returned to that State Party, which shall, upon request, furnish identifying data prior to their return.”

¹⁵ See Appendix VII.

26. Article 2 of the 1975 Registration Convention introduces a new element—concerning the case of two or more launching States—to the principle that the State of registration has jurisdiction over the space object and personnel. It reads as follows:

“1. When a space object is launched into earth orbit or beyond, the launching State shall register the space object by means of an entry in an appropriate registry which it shall maintain. Each launching State shall inform the Secretary-General of the United Nations of the establishment of such registry.

“2. Where there are two or more launching States in respect of any such space object, they shall jointly determine which one of them shall register the object in accordance with paragraph 1 of this article, bearing in mind the provisions of article VIII of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, and without prejudice to appropriate agreements concluded or to be concluded among the launching States on jurisdiction and control over the space object and over any personnel thereof.”

27. A good example of how a joint governmental administration could lead to specific agreements on jurisdiction and control is the 1988 Intergovernmental Agreement (IGA).¹⁶

28. One expert mentioned that in respect to jurisdiction in general the IGA provides that each partner will have jurisdiction over its own registered element.

29. In particular, Article 5.2 of the 1988 IGA Agreement states the following:

“Pursuant to Article VIII of the Outer Space Treaty and Article II of the Registration Convention, each Partner shall retain jurisdiction and control over the elements it registers in accordance with paragraph 1 above and over personnel in or on the Space Station who are its nationals. The exercise of such jurisdiction and control shall be subject to any relevant provisions of this Agreement, the MOUs, and implementing arrangements, including relevant procedural mechanisms established therein.”

30. The United States of America is the only country which has enacted a provision that establishes a link between the three key elements: inventions, jurisdiction and territory. Section 105 of 35 U.S.C. *Inventions in outer space* reads as follows:

“(a) Any invention made, used, or sold in outer space on a space object or component thereof under the jurisdiction or control of the United States shall be considered to be made, used or sold within the United States for the purposes of this title, except with respect to any space object or component thereof that is specifically identified and otherwise provided for by an international agreement to which the United States is a party, or with respect to any space object or component thereof that is carried

¹⁶ Agreement Among the Government of the United States of America, Governments of Member States of the European Space Agency, the Government of Japan, and the Government of Canada on Cooperation in the Detailed Design, Development and Operation and Utilisation of the Permanently Manned Civil Space Station, signed on September 29, 1988. See Appendix IV.

on the registry of a foreign state in accordance with the Convention on Registration of Objects Launched into Outer Space.

“(b) Any invention made, used, or sold in outer space on a space object or component thereof that is carried on the registry of a foreign state in accordance with the Convention on Registration of Objects Launched into Outer Space, shall be considered to be made, used or sold within the United States for the purposes of this title if specifically so agreed in an international agreement between the United States and the state of registry.”

31. One expert mentioned that this provision raised a lot of concern during the negotiations of the IGA Agreement¹⁷, and the European representatives were especially drawing attention to the wording of the United States amendment which spoke of “jurisdiction or control,” a term that was different from the Article VIII of the Outer Space Treaty which uses the words ‘jurisdiction and control’. Later, it was clarified that this wording was only used to avoid the non-application of United States jurisdiction on sub-orbital flights.

F. JOINT GOVERNMENTAL ADMINISTRATION OF SPACECRAFT, SPACE STATIONS, ETC.

32. Additional consideration should be given to joint governmental administration of spacecraft, space stations, etc., where specific problems concerning protection of intellectual property may arise as a result of the activities carried out on the spacecraft or space station. In particular, technology used on a space station is potentially liable to infringe, for example, existing patents of third parties.

33. The already mentioned 1988 IGA Agreement is an example of joint governmental administration. As it relates to the administration of a space station, the project is legally complex and far-reaching in time, and multi-billion dollar investments are involved. The Agreement was initially signed on September 29, 1988, among the Government of the United States of America, Governments of Member States of the European Space Agency, the Government of Japan, and the Government of Canada. The IGA came into force in July 1992, after ratification by Japan and the United States of America. The European signatories did not ratify the 1988 IGA. New negotiations have been undertaken with a view to concluding a new Intergovernmental Agreement including the Russian Federation as a new partner.

¹⁷ See Appendix IV.

34. The 1988 IGA provides for special rules concerning intellectual property. Article 21, paragraph 2 of the IGA stipulates that any activity occurring in or on a space station flight element shall be deemed to have occurred in the territory of the partner State which has registered that element. In particular, it states that:

“ for purposes of intellectual property law, an activity occurring in or on a Space Station flight element shall be deemed to have occurred only in the territory of the Partner State of that element’s registry, except that for ESA-registered elements any European Partner State may deem the activity to have occurred within its territory. For avoidance of doubt, participation by a Partner State, its Cooperating Agency, or its related entities in an activity occurring in or on any other Partner’s Space Station flight element shall not in and of itself alter or affect the jurisdiction over such activity provided for in the previous sentence.”

35. In comments prepared in 1988 and updated in 1995¹⁸ by the United States Patent and Trademark Office (USPTO) the following statements were made:

“Territoriality of Intellectual Property Law on the Space Station. Article 21 of the Space Station Intergovernmental Agreement provides that, for purposes of intellectual property law, an activity occurring in or on a Space Station flight element will be deemed to have occurred only in the territory of the Partner State of that element’s registry, except that for ESA-registered elements, any European Partner State may deem the activity to have occurred within its territory. In effect, an activity occurring on a U.S.-registered flight element would be considered to have occurred in the United States, and an activity occurring on any other element would be considered to have occurred in a foreign country.

“This provision has practical consequences under several sections of U.S. patent law. It may mean that use, sale, or knowledge of an invention occurring strictly on a U.S. flight element would bar patentability in the United States under 35 U.S.C. 102(a) or (b), while the identical activity occurring strictly on a non-U.S. element would not create such a bar. Conversely, under 35 U.S.C. 104, evidence of knowledge, use, or other activity with respect to an invention on a non-U.S. element would not be admissible to establish the date of invention, while evidence of identical knowledge, use, or other activity on a U. S. element would be admissible. [See, however, paragraph 42, below.]

“The legal consequences of this territorial approach apply to users regardless of the user’s nationality. Thus, a U.S. user of an ESA flight element would be subject to the same legal interpretations as a non-U.S. user, and these would be based on the theory that the relevant activities occurred outside the United States.”

¹⁸ Unpublished paper entitled *Consequences of 35 U.S.C. 104 for Inventions Made on Non-U.S. Flight Elements of the Proposed Space Station.*

G. SPECIAL QUESTIONS

36. The following are considerations applying to the special questions raised in paragraph 7 of the WIPO outline (see Annex I).

(a) Contractor of a Government

37. “Should rights in respect of intellectual property continue to vest in a contractor of a government who has, for example, made an invention or created a work, or should such rights be automatically vested in the government responsible for the space activity? Would licensing agreements provide an appropriate legal framework in this connection? How should these questions be approached in the case where the invention or work was created by several contractors in more than one country and the activity is carried out in cooperation among several governments?” (paragraph 7(a) of the WIPO outline).

38. One expert noted that an invention which was created in outer space is not relevant to the question of work-for-hire. In general, therefore, whether the title in an invention vests with the government of the contractor is a matter for national contract or work-for-hire principles. Within the European Space Agency (ESA), the rights to most contracted research will be vested in the contractor, while the Agency (ESA) retains a free license to use the rights for its research purposes. Similarly, the ESA member States’ industries also maintain the right to use the technology for space applications.

39. One expert recalled that in the United States of America the vesting of title in an invention created by a contractor employee under a contract with the National Aeronautics and Space Administration (NASA) depends on the size of the contractor; small businesses may elect to obtain title to the invention, whereas, in the case of large contractors, the title would otherwise automatically vest with NASA, but the contractor could request that NASA waive title to the invention and leave title with the contractor. NASA generally waives title to the benefit of the contractor where the contractor showed it to be willing and capable of commercializing the invention, for which NASA obtains a license for governmental purposes. Where the invention is made by more than one inventor working for different companies or one inventor working for a company and another working for the Government of the United States of America, it is considered joint inventorship. Under the law of the United States of America, each of the entities would have an undivided interest in the invention, for which joint custody of the invention would be negotiated.

(b) First-to-Invent Principle

40. “What are the implications of the existing different patent systems concerning the principles of first-to-file and first-to-invent? Where, under the first-to-invent principle, an experiment for an invention requires testing in outer space, should the invention be considered to have been made in outer space?” (paragraph 7(b) of the WIPO outline).

41. Two experts mentioned that the place of invention is not relevant in a first-to-file system nor in respect of WTO member States or NAFTA countries in the first-to-invent system found in the United States of America.

42. Section 104 of the 35 U.S.C. provides that:

“Invention made abroad. (a) In General - (1) Proceedings - In proceedings in the Patent and Trademark Office, in the courts, and before any other competent authority, an applicant for a patent, or a patentee, may not establish a date of invention by reference to knowledge or use thereof, or other activity with respect thereto, in a foreign country other than a NAFTA country or a WTO member country, except as provided in sections 119 and 365 of this title.

“(2) Rights - If an invention was made by a person, civil or military -

“(A) while domiciled in the United States and serving in any other country in connection with operations by or on behalf of the United States,

“(B) while domiciled in a NAFTA country and serving in another country in connection with operations by or on behalf of that NAFTA country, or

“(C) while domiciled in a WTO member country and serving in another country in connection with operations by or on behalf of that WTO member country,

that person shall be entitled to the same rights of priority as the United States with respect to such invention as if such invention had been made in the United States, that NAFTA country, or that WTO member country, as the case may be.”

43. In this regard, in comments prepared in 1988 and updated in 1995¹⁹ by the USPTO it was indicated that:

“With the conclusion of the NAFTA and GATT Uruguay Round agreements, the United States was obliged to change section 104 of title 35, United States Code. Those changes go to the heart of the issue that was addressed in the 1988 “Consequences ...” 35 U.S.C. 104 for Inventions Made on Non-U.S. Flight Elements of the Proposed Space document, namely, the perceived disadvantage of those engaging in inventive activity on non-U.S. flight elements of the proposed space station in acquiring a U.S. patent. Any such disadvantage, whether imagined or real, has now been eliminated for most of the countries involved in the International Space Station in view of the changes to section 104 as it no longer prohibits the proof of inventive activity in most (NAFTA countries and WTO member countries) foreign countries and, by extension, would not prohibit the proof of inventive activity on most non-U.S. flight elements of the proposed space station.”

¹⁹ Unpublished paper entitled *Consequences of 35 U.S.C. 104 for Inventions Made on Non-U.S. Flight elements of the Proposed Space Station.*

44. An additional issue remains to be considered in the context of the first-to-invent system, namely, what date and time should be accorded to an invention in outer space where such date and time is relevant in respect of the patenting of inventions in a country applying the first-to-invent principle. It remains to be determined whether the date and time of invention or creation should follow the international dateline or the date and time as used on the space object aligned with its home base. However, this question does not seem to require international harmonization because the issue appears to be a remote one.

(c) Enforcement Procedures

45. “According to Articles 41 and 61 of the TRIPS Agreement, Members are obliged to ensure that enforcement procedures are available to permit effective action against any act of infringement of intellectual property covered by the Agreement, including patents, trade secrets and copyrights, and to provide for criminal procedures and penalties to be applied, in particular, in respect of copyright piracy. What is the impact of these obligations with regard to intellectual property created or used in outer space?” (paragraph 7(d) of the WIPO outline).

46. Provided that any invention infringed in outer space is treated as if the infringement had occurred within the territory of the particular country, as is the case in the United States of America with respect to a space station of that country, the same level of enforcement available within that country is available in respect of inventions created or used in outer space.

47. Another aspect of intellectual property rights with respect to technology used in outer space involves the situation where technology used on a spacecraft may infringe existing patents of those parties. Infringement of existing patents by use of technology in outer space may be particularly important. Where cooperative space activity involves the territory of several states, searches must be made to determine potential liability in all countries involved.

(d) Dispute Settlement Procedures

48. “Are special recommendations to be made on dispute settlement procedures, including arbitration procedures?” (paragraph 7(e) of the WIPO outline).

49. No special recommendations were proposed by the experts on dispute settlement procedures in respect of inventions or literary works created or used in outer space.

50. Indeed, there is no need for such special recommendations because the generally available dispute settlement procedures, including arbitration procedures, in particular, the procedures organized by the WIPO Arbitration and Mediation Center, appear to be sufficient.

(e) Activities Having Effect in Non-Initiating Country

51. “With regard to outer space related activities carried out on the territory of a country or of several countries, what is the applicable law in the case where such activities have an effect in a country other than the country or countries in which the said activities are carried out? For example, where satellite broadcasting originates in a country other than the country controlling the satellite, which country’s law applies to the broadcasting?” (paragraph 7(f) of the WIPO outline).

52. The underlying question here is whether an invention made or used in outer space necessitates special consideration from the point of view of patent protection or whether the question concerns the definition of territorial jurisdiction exclusively. If a matter of territoriality, the issue would be divided between two categories:

- (i) space objects or their components set in motion, and
- (ii) space objects or their components fixed in a particular location.

53. In either category, these objects or components would be presumed to be outside the territory claimed by an individual State as its national airspace and under its jurisdiction and/or control. Moreover, it is assumed that space objects and their components usually are claimed by, and are under the jurisdiction and/or control of, a State or a group of States. Accordingly, where a space object or component, claimed by a State or group of States, is outside the territory claimed by a State or a group of States, the principles of law which address actions in analogous situations, as in respect of airplanes in international airspace or ships in international waters, would apply.

54. The United States of America, for example, applies this traditional legal principle to the matter of outer space under a special statute, according to which “[a]ny invention made, used, or sold in outer space on a space object or component thereof under the jurisdiction or control of the United States shall be considered to be made, used, or sold within the United States for purposes of this title, except with respect to any space object or component thereof that is specifically identified and otherwise provided for by an international agreement to which the United States is a party . . .” (35 U.S.C. § 105(a)).

55. One expert noted that the jurisdictional question obviously is more complex in respect of the ESA where several countries could maintain claims of jurisdiction and control. This latter question, however, is not a matter to be pursued by WIPO.

(f) Doctrine of Temporary Presence

56. “Can the doctrine of temporary presence under Article 5^{ter} of the Paris Convention for the Protection of Industrial Property be applied to outer space activities carried out among several countries?” (paragraph 7(g) of the WIPO outline).

57. It is to be noted that Article 5*ter*, which was introduced into the Paris Convention in 1925, only concerns the question of patent infringement in one country .

58. One expert explained that the position of the ESA is that, since Article 5*ter* of the Paris Convention only mentions vessels, aircraft or land vehicles, space objects do not fall under this provision; therefore, the temporary presence of elements of a space station for the purpose of launching or return in a foreign country will not automatically be exempted from any patent infringement. Even if the provision would apply to (elements of) a space station, it would be doubtful whether the use of patented inventions onboard space stations would fall under “operational needs.”

59. One expert mentioned that in the United States of America, since 35 U.S.C. § 105 equates any activity taking place on a space object under the control of the United States of America to be the same as if that activity took place within the borders of its country, the doctrine of temporary presence which applies in the United States of America should apply to the space object under that country’s jurisdiction. The intent of 35 U.S.C. § 105 appears to have been to state that the patent laws which apply to the territorial boundaries of the United States of America also apply to a space object under the jurisdiction and control of the United States of America.

60. The International Bureau believes that the principle of Article 5*ter* could also be applied to spacecraft or elements thereof entering a foreign country but that, at present, there is no binding rule in the Paris Convention to this effect.

[End of Annexes, Appendices follow]