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PROVISIONAL APPLICATION IN AN INTERNATIONAL ORGANIZATION

David Sagar*

I. Introduction

1. On 15 April 1999, amendments to the Inmarsat Convention and Operating Agreement for the restructuring and substantial privatization of the Inmarsat Organization were applied provisionally, by decision of the Inmarsat Assembly of Parties.¹ Inmarsat was the first of the international satellite organizations (ISOs) to take this step.

2. Inmarsat was an intergovernmental organization (IGO), operating on a commercial basis. The Assembly decision enabled the assets and business of Inmarsat to be transferred to private law Companies incorporated under English law, while retaining the IGO to oversee certain public service obligations of the Company.

3. The use of the doctrine of provisional application to achieve this objective was indispensable to Inmarsat's commercial future. This article outlines the reasons for this, and the search to substantiate legally the use of the doctrine. The results represent a significant evolution of public international law on the subject.

II. The Reasons for Inmarsat's Restructuring

4. Inmarsat's restructuring has been described elsewhere, but a brief outline is given here to show the full implications of the Inmarsat Assembly's decision.²

* Former Senior Attorney, Inmarsat. The views expressed in this article are those of the author, and not necessarily those of Inmarsat.

The Inmarsat documents cited in this article may be obtained on request, subject to any confidentiality restrictions, from the Inmarsat Legal Office, 99 City Road, London, England, EC1Y 1AX, Fax: + 44 (0) 171 728 1602.

¹ Assembly/12/20, Report of the 12th Assembly Sess., sec. 8 and relevant Annexes. Assembly/13/Report of the 13th (Extraordinary) Sess., sec. 4.2 and relevant Annexes.

² A. Auckenthaler, *Recent Developments at Inmarsat*, 38 Proc. COLLOQ. L. OUTER SPACE 149 (1995) (an IISL Colloquium) and 20 ANNALS AIR & SPACE L. 53 (1995). D. Sagar, *The Privatization of Inmarsat*, 41 Proc. COLLOQ. L. OUTER SPACE 205 (1999). D. Sagar, *The Privatization of Inmarsat-Special Problems*, Paper presented to the

5. Inmarsat was established in 1979 under the Inmarsat Convention and Operating Agreement³. The Member States were Parties to the Convention, and their designated telecommunications entities (some public, some private) were Signatories to the Operating Agreement. The purpose of the Organization was to provide a global mobile satellite system, initially for maritime commercial and safety communications (later extended to aeronautical and land mobile communications).⁴

6. Although operating on a commercial basis, the Organization functioned more like a cooperative. Governance and financing of capital requirements were the responsibility of the Signatories, who were also the main distributors of satellite services to the mobile end-users. The changing telecommunication environment in the 1990's, primarily the rise of competing systems, made radical institutional change necessary to enable Inmarsat to remain economically viable and competitive. The restrictive governance and financing methods of the Organization had to give way to a normal multinational corporate structure with a fiduciary board of directors, access to external finance and public markets, and limited liability for investors.

7. The amendments to the Convention to implement this restructuring were radical. Ownership of the satellite system and management of its future operation were transferred to nationally incorporated private Companies. The Operating Agreement was terminated, the rights of Signatories extinguished, and their investment shares exchanged for ordinary shares in the company structure. The IGO continues in existence under the amended Convention, but its functions are limited to overseeing the performance by the Companies of certain international public service obligations, primarily the provision of Global Maritime Distress and Safety System (GMDSS) services.

III. The need for Provisional Application of the Restructuring Amendments

8. Article 34 of the Inmarsat Convention established a two-step procedure for amending the Convention, *firstly*, adoption of amendments by the Assembly and, *secondly*, acceptance by two-thirds of the Parties representing at least two-thirds of the total investment shares (referred to hereafter as "a qualified majority"). Upon entry into force, the amendments

ESA/ECSL Colloquium on International Organizations and Space law - Their Role and Contributions (Perugia, Italy, May 1999) (SP-442, 3rd ECSL Colloquium).

³ The Convention and Operating Agreement on the International Maritime Satellite Organization (INMARSAT), 1143 UNTS 105 and 113 respectively, both of 3 September 1976 and entered into force simultaneously on 16 July 1979.

⁴ D. Sagar, *Inmarsat*, 11 ANNALS AIR & SPACE L. 331 (1986), and 14 *id.* 473 (1989). W. Von Noorden and P. Dann, *Space Communications to Aircraft: A New Development in International Space Law*, 15 J. SPACE L. 25 and 147 (1987) and *Land Mobile Satellite Communications: A Further Development in International Space Law*, 17 J. SPACE L. 1 and 103 (1989).

were binding on all Parties and Signatories, including those which had not accepted them. Article XVIII of the Inmarsat Operating Agreement contained a broadly similar procedure. There was no explicit provision for provisional application of amendments.⁵

9. Inmarsat Parties and Signatories recognized very early that the restructuring amendments, whatever their scope, would need to be implemented promptly, so as to enable external finance to be raised for a new range of services and a fourth generation of satellites procured to ensure Inmarsat's future financial viability. The long delay normally taken for amendments to the Convention to enter into force, as described in paragraph 30 below, would have defeated the commercial purposes of restructuring and jeopardised the ability of Inmarsat to continue to fulfil one of its original purposes, i.e., to provide space segment capacity for GMDSS services. Therefore, the legal research and consultations concerning provisional application took place in parallel with the long drawn out negotiations among the membership on the form of the new structure.

10. Provisional application is well established in international law in relation to bilateral or multilateral treaties, and has also been used in respect of constituent instruments of IGOs, mainly in connection with the initial creation of the IGOs concerned. In such cases, its use has generally depended upon the individual decision of the Member States to apply the treaty provisionally.

11. Use of provisional application by decision of the supreme organ of an IGO to amend its constituent instrument has occurred in other cases but less frequently. The amendments to the Inmarsat instruments, and the implications for the Inmarsat Member States, were, however, more

⁵ Article 34 "Amendments" of the Convention reads:

(1) Amendments to this Convention may be proposed by any Party. Proposed amendments shall be submitted to the Directorate, which shall inform the other Parties and Signatories. Three months is required before consideration of an amendment by the Council, which shall submit its views to the Assembly within a period of six months from the date of circulation of the amendment. The Assembly shall consider the amendment not earlier than six months thereafter, taking into account any views expressed by the Council. This period may, in any particular case, be reduced by the Assembly by a substantive decision.

(2) If adopted by the Assembly, the amendment shall enter into force one hundred and twenty days after the Depositary has received notices of acceptance from two-thirds of those States which at the time of adoption by the Assembly were Parties and represented at least two-thirds of the total investment share. Upon entry into force, the amendment shall become binding upon all Parties and Signatories, including those which have not accepted it.

Article XVIII of the Operating Agreement required the approval of amendments by the Inmarsat Council, confirmation by the Assembly, and a qualified majority of Parties and Signatories to accept them.

fundamental than in those other cases, and in this respect the Inmarsat experience has broken new ground in the application of the doctrine in relation to IGOs.

IV Legal Questions Relating to the use of Provisional Application by Inmarsat

12. The legal questions were as follows:

- (a) In the absence of explicit provision in the Convention, did the Assembly of Parties have inherent authority to decide that substantial amendments could be applied provisionally, pending and subject to their entry into force in accordance with the normal procedures?
- (b) Would a consensus decision be sufficient, and could a dissenting Party block a consensus decision?
- (c) In the absence of a consensus or unanimity, would a decision of the Assembly supported by two-thirds of the Parties present and voting be sufficient?
- (d) What rights, if any, would a dissenting Party have?
- (e) Was it possible under the Inmarsat Convention to have a dual regime, in which some Parties remained subject to the Convention as unamended, whilst others accepted provisional application of the restructuring amendments?
- (f) What would be the effect, if any, on the provisional application decision, if the amendments did not eventually enter into force in accordance with the normal procedures, taking into account the fact that the restructuring, once implemented, would be practicably irreversible?

13. In seeking answers to these questions, the Inmarsat Director General initially examined the relevant provisions of the 1969 Vienna Convention on the Law of Treaties ("the Vienna Convention"), the precedents for the use of provisional application in connection with the establishment of IGOs and with amendments to their constituent instruments, including, in particular, the practice of the International Telecommunication Union ("ITU"), and Inmarsat's own prior practice. Written advice was also obtained from a leading expert in treaty law, and other legal sources were examined.

V. International Law and State Practice on Provisional Application

A. *The Vienna Convention*

14. Law and State practice on provisional application of treaties was codified in Article 25 of the Vienna Convention as follows:

Article 25

1. A treaty or a part of a treaty is applied provisionally pending its entry into force if:
 - (a) the treaty itself so provides; or
 - (b) the negotiating States have in some other manner so agreed.
2. Unless the treaty otherwise provides or the negotiating States have otherwise agreed, the provisional application of a treaty or a part of a treaty with respect to a State shall be terminated if that State notifies the other States between which the treaty is being applied provisionally of its intention not to become a party to the treaty.

15. The *travaux préparatoires* for Article 25 recognized that the State practice of provisional application of treaties by various methods was widespread. Some State Representatives could not support the Article because their national Constitutions required prior legislative approval for acceptance of treaty obligations, provisionally or otherwise, which was an obstacle later encountered by Inmarsat, as shown in Section VI below. However, it was also recognized that the Article did not impose an obligation on any State that did not wish to apply the treaty provisionally. The purpose and scope of the Article were summed up thus: "The practice of provisional application was now well established among a large number of States and took account of a number of different requirements. One was where, because of a certain urgency in the matter at issue, particularly in connection with economic treaties, it was highly desirable that certain steps should be taken by agreement in the very near future"⁶.

16. Other relevant articles of the Vienna Convention, which are referred to later, are Article 5 providing that the Convention also applies to a treaty which is the constituent instrument of an international organization, and Article 39 providing that the rules in Part II of the Convention (which includes Article 25) also apply to agreements to amend a treaty, unless the treaty otherwise provides.

B. State Practice on Provisional Application of Treaties Establishing International Organizations

17. There have been many examples of provisional application of treaties establishing IGOs, pending their entry into force. These included the provisional International Civil Aviation Organization (ICAO), the Preparatory Committee of the International Maritime Consultative Organization (IMCO) and the interim arrangements for the International Telecommunications Satellite Organization (Intelsat). A Study undertaken in 1973 by the United Nations Secretary General examined a number of examples of provisional application, pending their entry into force, of

⁶ Vienna Convention on the Law of Treaties, 23 May 1969, 1155 U.N.T.S. 331.

multilateral treaties, especially those establishing international organizations.⁷

18. The *reasons* for the provisional application varied but were generally intended to facilitate preparatory measures or early operations of the IGO. The *means* employed varied from explicit provisions in the treaty itself, separate Protocols signed by States, or Resolutions of Diplomatic Conferences. The *scope* of the activities authorized varied from administrative arrangements to the full range of rights and obligations. In most cases, only those States which expressly approved the provisional application were bound by it.

C. *State Practice On Amending the Constituent Instruments of International Organizations*

19. The examples of provisional application described in Section V.B above relate to the *creation* of international organizations rather than the *amendment* of the constituent instruments of existing organizations. It was the latter situation that was of special relevance to Inmarsat. As noted in paragraph 16 above, the Vienna Convention applies to the constituent instruments of an international organization, and Article 25 also applies in respect of amendments to a treaty.

20. There are instances in which the supreme organs of IGOs have applied provisionally amendments to their constituent instruments, without explicit power in their constitutions. One example is the General Congress of the Universal Postal Union (UPU). In 1964, the UPU adopted certain Acts relating to the organization and functioning of its governing bodies. As these were not due to enter into force until 1966, the UPU decided to apply the Acts immediately to enable work to begin without delay. These precedents did not involve amendments as comprehensive as the Inmarsat restructuring amendments, but they demonstrated that the supreme organs of the IGOs concerned had inherent legal power to decide on provisional application of amendments.⁸

⁷ See: (i) United Nations General Assembly (Committee on the Peaceful Uses of the Sea-Bed and the Ocean Floor Beyond the Limits of National jurisdiction), *Examples of Precedents of Provisional Application, pending their entry into force, of Multilateral Treaties which have Established International Organizations and/or Regimes*, Report of the Secretary General, Doc. A/AC. 138/88, dated 12 June 1973; (ii) D. Vignes, *An Ambiguous Notion: The Provisional Application of Treaties*, 18 ANNUAIRE FRANCAIS DROIT INT'L 181-199 (1972); (iii) Law of the Sea Treaty, *Alternative Approaches to Provisional Application*, 13 I. L. M. 454-461 (1974); (iv) H.G. SCHERMERS & N.M. BLOKKER, INTERNATIONAL INSTITUTIONAL LAW paras. 798-9, at pp. 521-2 (3rd revised ed.); (v) 5 U.N. JUR. Y.B. 221-223 (1976).

⁸ Other examples were: In 1951, the Committee of Ministers of the Council of Europe applied immediately certain resolutions that were intended subsequently to be incorporated in the Statute of the Council, including those relating to its organs and the procedures for the admission of new Member States. In 1964, the Inter-American Conference gave immediate effect (without explicit authority) to

21. Another category of precedents relates to decisions on provisional application which are expressly *subject to limits imposed under national law*. This concept played an important part in the final Inmarsat Assembly decision. An important example of this category is the International Cocoa Organization. In 1976, this Organization sought advice from the United Nations about the rights of countries to participate in the Organization on the basis of provisional application before they had completed internal implementing legislation. One government notified the Organization that it would apply the new Agreement on a *de facto* basis within its existing legislation. The UN advised the Organization that: "You may possibly find, in the practice of other organizations, that it is understood that "provisional application" means only that, pending ratification, States will do their best, within their existing legislation, to apply the agreement."⁹

22. Another example is found in the 1994 Agreement Relating to the Implementation of Part XI of the UN Convention on the Law of the Sea of 1982 (concerning the International Seabed Authority) adopted by the UN General Assembly. Article 7 of the Agreement provided for States which had consented in the General Assembly to the adoption of the Agreement, or which had signed it, to apply the Agreement provisionally unless they notified the Depositary that they would not do so. Furthermore, States applying the Agreement provisionally would do so "in accordance with their national or internal laws and regulations". The purpose of the language was to overcome the difficulties of those States that had constitutional requirements for parliamentary authorization.¹⁰

23. One commentator has written: "As for the legal effects of provisional application, a distinction can be made between its effects at international level and the national level. Although it seems beyond any doubt that the agreement to apply a treaty provisionally is enforceable at the international level, the legal effects of provisional application at the national level are the

amendments to the OAS Charter for the admission of new Member States. In 1967, the Council of Ministers of the Latin American Free Trade Association ("LAFTA") adopted a resolution immediately providing for Sub-regional Agreements, in effect amending the LAFTA Constitution, without using the amendment procedures specified in that Constitution.

⁹ Other examples in this category are: the Statutes of the International Centre for Genetic Engineering and Biotechnology (Article 21.3), adopted in 1983 under the auspices of the UN Industrial Development Organization, provided that the Statutes would be applied provisionally "within the limits allowed by national legislation". The 1994 Energy Charter Treaty (ECT) provides that it is to be applied provisionally by a state "to the extent that such provisional application is not inconsistent with its constitution, laws and regulations."

¹⁰ See UNGA Res. Meeting dated 28 July 1994 (A/RES/48/263), 101st Plenary Meeting and the Agreement in the Annex.

outcome of a complex legal equation that is likely to differ from state to state."¹¹

24. An example of a failed attempt at provisional application is found in ICAO practice. The Convention on International Civil Aviation (Chicago Convention) does not contain explicit provision regarding provisional application of amendments. ICAO's former Legal Adviser, in describing a proposal for an Assembly consensus decision to apply provisionally an amendment to the Convention in 1989 stated that "such consensus was not forthcoming. One single objection in the Assembly frustrates the possibility of provisional application. Unanimity is required."¹²

D. International Telecommunication Union (ITU) Practice

25. For many years, ITU Plenipotentiary Conferences have provisionally applied new or revised constituent instruments of the ITU.¹³ The most recent example was the adoption of a new ITU Constitution and Convention by the ITU Additional Plenipotentiary Conference (Geneva, 1992 (APP-92)), which made substantial changes to the structure of the Union as it existed under the ITU Telecommunication Convention (Nairobi, 1982).¹⁴

26. The 1992 Conference also adopted Resolution 1 providing that the provisions of the Constitution and the Convention relating to the new structure and working methods of the Union should be applied provisionally as from 1 March 1993.

27. In advising the Conference of its authority to adopt the Resolution, the ITU Legal Adviser stated that "the ITU, as any other international organization, was a living organism or body being in a constantly evolving

¹¹ R Lefebvre, *The Provisional Application of Treaties*, in J. KLABBERS AND R. LEFEBVRE (EDS), *ESSAYS ON THE LAW OF TREATIES* 90, 95 (Kluwer Law Int'l 1998).

¹² M. Milde, *The Chicago Convention: Are Major Developments Necessary or Desirable 50 Years Later*, 19 (1) *ANNALS AIR & SPACE L.* 413 (1994).

¹³ See, for example, Additional Protocol I to the International Telecommunication Convention, (Atlantic City, 1947) (which revised the 1932 Madrid ITU Convention), concerning transitional arrangements for the new Convention before it came into force.

¹⁴ Note that the Constitution and Convention of the ITU (Nice, 1989) did not enter into force, and was superseded by the 1992 Constitution and Convention. See, in this respect, the Analysis of the Legal Aspects Related to amending the Constitution and Convention of the ITU (Nice, 1989) by A. Noll, ITU Legal Adviser, ITU Doc. 131-E, 21 March 1991. It is also noted that many States which are Parties to the 1982 Nairobi Convention are not all Parties to the 1992 Geneva Constitution and Convention. The fact that States are legally subject to different ITU constitutions does not appear to prevent the effective functioning of the ITU. However, attention is drawn to Resolution 69 of the ITU Plenipotentiary Conference, Kyoto, 1994, urging Members which were not yet Parties to the 1992 Geneva Constitution and Convention, to provisionally apply them until they had become Parties.

process, thus adapting itself to the new telecommunications environment and the changing requirements of its Member States". At the ITU there was a "well-established practice with regard to the concept of provisional application". He further advised that, under Article 25.1 of the Vienna Convention, a treaty was applied pending its entry into force if either the treaty itself so provided, or the negotiating States have in some other manner so agreed. One "such other manner" would be the Resolution on provisional application under discussion.¹⁵

28. According to consultations between the Inmarsat General Counsel and the ITU Legal Adviser, the Resolution was adopted by consensus. The legal effect of the provisional application was that it governed the functions of the various policy making organs of the ITU and the Secretariat, and enabled the ITU to enter into commitments on the basis of the new provisions. Financial contributions payable by ITU Members to the Organization were not altered by the new instruments.

E. Inmarsat's Prior Practice concerning Amendments to its Convention and Operating Agreement

29. Prior to the restructuring amendments referred to in paragraph 7 above, Inmarsat had amended its constituent instruments three times. The first and second occasions were in 1985 and 1989 when the amendments to the Convention and Operating Agreement were adopted by the Assembly to extend the institutional competence of the Organization to enable it to provide aeronautical and land mobile services, respectively.¹⁶

30. On neither occasion did the Assembly decide to apply the amendments provisionally. Due to the time needed to obtain acceptances from a qualified majority, the aeronautical amendments only entered into force in 1989, and the land mobile amendments in 1997. These long delays were attributable to the legislative action required in some countries, or low priority or administrative impediments in others.

31. At its Tenth (Extraordinary) Session in December 1994, the Assembly adopted amendments to the Convention and Operating Agreement to change the name of the Organization and to make a small change to Article 13 of the Convention relating to the composition of the Council. The Assembly also decided that the amendments would be implemented *with immediate*

¹⁵ Statements by Alfons Noll, ITU Legal Adviser, reported in Minutes of the Ninth and Twelfth Plenary Meetings of the ITU Additional Plenipotentiary Conference, Geneva, December 1992, APP-92/204-E at 3-5 and 207-E, at 12-13.

¹⁶ Reports of the Fourth and Sixth (Extraordinary) Sessions of the Inmarsat Assembly. See also *supra* note 4. In practice, Inmarsat started its aeronautical and land mobile services before for the respective amendments entered force, without objection from any Party. Although the introduction of the new services had some budgetary implications for Signatories, the amendments did not affect Inmarsat's structure or the interests of Parties and Signatories.

effect pending the formal entry into force of the amendments. The words "provisional application" were not used because several Parties were unable to agree to the use of the doctrine without prior legislative approval. In view of the minor character of the amendments, they did not oppose the consensus decision using the alternative wording. The discussions at the Tenth Session foreshadowed the more difficult negotiations later on the provisional application of the restructuring amendment.¹⁷

F. *Other Legal Sources*

(a) *Expert Opinion*

32. Inmarsat obtained written advice from an expert in treaty law as to the authority of the Assembly to adopt transitional arrangements to enable restructuring amendments to the constituent instruments to be applied provisionally, pending their formal entry into force. A summary of the advice is given in this Section.¹⁸

33. The advice took into account that Inmarsat had been specifically created to provide economically viable commercial services in the new field of satellite telecommunications and that to give the relevant provisions of the Convention a static or one-time meaning would lead to an unreasonable result. Reference was made to a leading treatise on international law stating that "There is room for the view that a treaty of a 'constitutional character' should be subject to somewhat different rules of interpretation, so as to allow for the intrinsically evolutionary nature of a constitution."¹⁹ It was legitimate to take into account technological developments and changed commercial practices in telecommunications. In addition to the explicit purposes of the Organization, other provisions required it to act economically and efficiently, and these directives provided a sufficiently solid basis to apply restructuring amendments quickly in order to achieve the original purposes of the Organization in conditions which had substantially changed since its inception.²⁰

¹⁷ See Report of the Tenth (Extraordinary) Session of the Inmarsat Assembly. The 1994 amendments had not entered into force at the time of the provisional application of the restructuring amendments, and were effectively superseded by those amendments.

¹⁸ Legal Opinion dated 22 April 1994 of Professor S. Rosenne, (IWG/8/3, Annex II), and supplementary Opinion contained in the Letter dated 11 April 1998 from Professor Rosenne to the Inmarsat General Counsel.

¹⁹ 1/2 OPPENHEIM'S INTERNATIONAL LAW 1268 (Jenning & Watts eds., 9th ed., 1992).

²⁰ Article 3 (1) of the Convention set out Inmarsat's purposes, which were, inter alia, to provide maritime commercial, distress and safety of life services. Article 5 (3) required it to operate "on a sound economic and financial basis, having regard to accepted commercial principles". Article 15 required the Council to carry out Inmarsat's purposes "in the most economic, effective and efficient manner consistent with the Convention and Operating Agreement".

34. The Vienna Convention (Article 5) applied to Inmarsat, without prejudice to its relevant rules as found in its constituent instruments, and also its decisions and established practice. These relevant rules included the express powers of the Assembly of Parties under Article 12 (1) (g) and 34 (1) of its Convention to decide on amendments, and the requirement under Article 11 (2) that Assembly decisions on matters of substance be taken by a two-thirds majority of Parties present and voting.²¹

35. Therefore, the Assembly had *explicit* power to adopt the restructuring amendments to adapt the Organization to current conditions. The Assembly also had *inherent* power to decide to apply the amendments provisionally, without waiting for the amendments to enter into force, if this was found to be necessary in the circumstances. This quick implementation was an essential feature of the restructuring which would have been meaningless without it. There was also a previous practice of Inmarsat providing for immediate implementation of amendments pending formal entry into force (see paragraph 31) above.

36. It would be politically desirable for the decisions on both the amendments and their provisional application to be adopted by consensus or, if that could not be achieved, by a qualified majority required under Article 34 (2) for the amendments to enter into force. This would provide assurances that the amendments would formally enter into force as soon as possible. However, it would be legally sufficient for the Assembly's decision on provisional application to be taken by two-thirds of the Parties present and voting.

37. Parties that were unable to accept the amendments could not frustrate the will of the majority. They had a choice of remaining in the Organization without themselves ratifying the amendments or of withdrawing from the Organization pursuant to Article 29 of the Convention.²²

²¹ The advice of Professor Rosenne also stated that, although technically the Vienna Convention entered into force on 27 January 1980, *i.e.*, after the Inmarsat Convention and Operating Agreement (*supra* note 3), the Vienna Convention was widely regarded for the most part as declaratory of customary international law, and could accordingly apply to Inmarsat. It was also confirmed that although some of the Signatories to the Operating Agreement were technically private law entities, the Agreement was a treaty for the purposes of the Vienna Convention, *inter alia*, because of its interdependence with the Inmarsat Convention, and because it contained various procedural provisions showing that the Parties regarded it as a treaty.

²² A recent comment was that it would be unfair for any one member to be able to prevent the whole organization from introducing an amendment desired by its other members. In general it would be better practice to introduce the amendment and allow the dissenting member to withdraw from the organization. See H.G.SCHERMERS & N.M. BLOKKER, *INTERNATIONAL INSTITUTIONAL LAW*, sec. 1171 at p.727 (3rd rev. ed.1995).

(b) Other Aspects

38. Taking into account the precedents outlined in Section V.C above, and the legal opinion given in Section F (a), the Inmarsat General Counsel advised Parties that the Assembly would have inherent power in the circumstances to decide on provisional application of the amendments particularly in order to ensure that one of the main purposes of the Inmarsat Convention, namely the provision of space segment capacity for GMDSS services, could be fulfilled.²³

39. This advice was supported by the doctrine and practice relating to dynamic interpretation of treaties that are the constituent instruments of intergovernmental organizations, including the advice given by the ITU Legal Adviser, referred to in paragraph 27 above.²⁴ The growth in the number of IGOs with large memberships made the task of securing unanimous approval to amendments very difficult.²⁵ Inmarsat's prior experience with amendments showed that it was a very long process even to obtain the qualified two-thirds majority needed for acceptance of uncontroversial amendments.

40. The relevant provisions of the Inmarsat Convention provided that amendments which entered into force upon acceptance by the qualified two-thirds majority were binding on all Parties, including those which had not accepted them. This in fact occurred with both the 1985 and 1989 amendments, as indicated in section V (E) above. The dissenting Parties always retained the right to withdraw from the Organization if the amendments were unacceptable to them, though none did so.

41. Another legal issue was whether a dual regime was possible under the Inmarsat Convention. This issue was raised because a few Parties questioned whether they could remain subject to the Convention, as unamended, while most others would be subject to the restructured Convention. The ITU precedents show that while some States became Parties to the 1992 Geneva Constitution and Convention others remained Parties only to the 1982 Nairobi Convention. In the ITU such a dual regime was possible because the obligations on States as ITU Members were not significantly affected by the particular Constitution and Convention to which they were Parties, nor did it affect the continued operation and activities of the ITU in practice, despite the considerable internal structural changes to the Organization.

²³ On the topic of inherent powers, see, for example, Seyersted, *International Personality of Intergovernmental Organizations: Do Their Capacities Really Depend Upon Their Constitutions?*, 4 INDIAN J. INT'L L. 1 (1964), especially at 4, 19-26, 40 and 54.

²⁴ On the topic of dynamic interpretation of treaties that are the constituent instruments of IGOs, see, for example, MALCOLM N. SHAW, *INTERNATIONAL LAW* 586-587 (3rd ed., 1991); D.W. BOWETT, *THE LAW OF INTERNATIONAL INSTITUTIONS* 338 (4th ed., 1982) and E. LAUTERPACHT, Q.C., *The Development of the Law of International Organizations by the Decisions of International Tribunals*, IV *Extrait R.C.A.D.I.* 379 & 458-459 (1976).

²⁵ See E. SCHWELB, *The Amending Procedure of Constitutions of International Organizations*, 31 BRIT. Y.B. INT'L L. 50-51 (1954).

42. However, the advice given by the Inmarsat General Counsel to Parties was that a dual regime was not possible in Inmarsat's case. Article 32(5) of the Convention did not permit any reservations to be made and Article 34 (2) provided that once amendments entered into force, they were binding even on Parties which had not accepted them.²⁶ Parties could not be subject to varying provisions, particularly because of the integrated nature of the investment share structure under the Operating Agreement and the related financial obligations of Signatories, as well as the rights of membership of Signatories in the Council.

VI. Consultations with Inmarsat Parties

43. It was essential that the support of Inmarsat Parties for provisional application be assured. The urgent need to restructure had been expressed by the Inmarsat Assembly at its Eleventh (Extraordinary) Session in February-March 1996.²⁷ The Intersessional Working Group of Parties and Signatories (IWG) which had been mandated by the Assembly to recommend the restructuring model, and the Inmarsat Council, had explicitly requested that Parties express views as to the provisional application of amendments. Without such support, the task of restructuring would have been pointless for the reasons set out in paragraph 9 above.

44. Therefore, in parallel with the negotiations on the form of the restructured Inmarsat, extensive consultations were held with Parties both through correspondence and meetings of legal experts. Parties were informed of the results of the research into the relevant law and the various precedents referred to in Section V above.

45. A Legal Panel held at Inmarsat in January 1996²⁸ as well as consultations with individual Parties found that a variety of practices existed. In some countries provisional application of treaty amendments could take place by government decision. In others, legislative approval may be required depending on the scope and nature of the amendments. In some countries, however, provisional application could not be approved without prior legislative approval.

46. Views expressed included the assertion that each Party retained the right to implement provisional application within its own jurisdiction in accordance with its domestic law. In the absence of explicit authority in the

²⁶ In at least one State, Japan, the 1989 land-mobile amendments required parliamentary approval and as a result Inmarsat's land mobile services were not authorized in Japan until that approval was obtained. After the 1994 change of name amendment, the former name continued to be used in official documentation in Japan because the change also required legislative approval. These national legal requirements did not prevent the Japanese Signatory participating in Inmarsat Council decisions regarding the implementation of the Organization's land mobile service activities, nor did they lead to any objection by the Japanese Party to the use of the new name by the Organization internationally. This internal legal situation did not result in a "dual regime" but reflected the practice referred to in paragraph 59 of this article.

²⁷ Report of the Eleventh (Extraordinary) Session of the Inmarsat Assembly.

²⁸ IWG/13/8, Annex VIII.

Convention for provisional application, unanimity or at least a consensus in the Assembly would be needed. Even though amendments were binding on all Parties once they entered into force, the dissenting minority had a right to expect that the acceptance procedures under Article 34 (2) would not be effectively overridden by provisional application. Indeed, there was a view that such a decision could be subject to legal challenge.

47. In April 1997, a Meeting of Legal Experts from Inmarsat Parties and Signatories met and addressed the provisional application issue, against the background of the legal opinions and research, and the results of the consultations with Parties. For reasons referred to in paragraph 31 above, the terminology "rapid implementation" was used at that time, to ease the consideration of the subject for Parties who had difficulty with agreeing to provisional application. However, for consistency, the phrase "provisional application" is generally used in this article.

48. The Meeting noted that:

(a) according to public international law, the treaty amendments can be provisionally applied if the Parties decide to do so;

(b) there were differing views about whether the Parties may do so through the Assembly by a two-thirds majority or must use another procedure;

(c) some Parties have internal requirements that will make it difficult to use provisional application.

In light of these unresolved issues, the Meeting requested:

(a) Party and Signatory legal experts to work on pragmatic solutions to the matter of provisional application; and

(b) the IWG to give priority to resolving these issues, so that the model adopted by the Assembly can be rapidly implemented.²⁹

49. The pragmatic solutions sought were intended to enable Parties, which could not vote in favour of provisional application but which supported politically the early restructuring, to refrain from obstructing an Assembly decision on provisional application.

50. Those Parties were informed that the restructuring amendments did not impose any additional financial or other obligations on them, although their Signatories, many of which were government-owned entities, would lose management rights as members of the Council. The only other consequences on the domestic plane for those Parties were that their Signatories would need to be authorized to exchange their investment shares under the Inmarsat Operating Agreement for an equivalent ordinary shareholding in the new corporate structure. If this authorization could not be given until the parliamentary processes had been completed for acceptance of the amendments, the ordinary shares to which the Signatory would be entitled would be held by the new Companies under a trust arrangement until the processes had been completed. The Party would also have the right to withdraw from membership of the Organization, in which case the value of its Signatory's investment shares would be repaid to the Signatory.

²⁹ Report of the Meeting of Legal Experts, April, 1997, (IWG/18/2, Sec. 8.1 and IWG/19/3).

51. The Director General pursued the consultations with Parties. While many Parties indicated that they would be able to support provisional application, there were a number that were unable to do so for the reasons mentioned and would not give an indication as to whether or not they would actively oppose a decision of the Assembly. The discussions with Parties generally indicated that it would be desirable to seek a decision by consensus, which in this case was interpreted to mean the absence of any active objection to a decision to use provisional application.

VII. The Final Steps

A. *Inmarsat Assembly Decisions*

52. At further Meetings of Legal Experts in January 1998 and the IWG in February 1998, recommendations were made to the Assembly as to the provisional application of the restructuring amendments under conditions which recognized the overwhelming commercial imperatives necessitating the prompt restructuring. It was also recommended that the provisional application decision be accompanied by an express acknowledgement by the Assembly about the need for consistency of the decision with the national laws of each Party. The text of the wording is set out in paragraph 58 below. This became known as a "subordination clause", *i.e.* subordinating the decision to national law requirements at the national level.

53. At its Twelfth Session in April 1998, the Assembly (after a vote) adopted and confirmed amendments for the restructuring of the Organization. It deferred a decision on provisional application but (a) urged Parties with domestic legal constraints on the use of that doctrine to seek pragmatic solutions, consistent with their domestic law, and (b) as the restructuring would, in practice, be irreversible, urged all Parties to use best efforts to accept the amendments promptly, once a decision on provisional application had been taken.³⁰

54. The question of deciding upon provisional application of the restructuring amendments therefore came before the Thirteenth (Extraordinary) Session of the Assembly in September 1998.

55. The legal advice given to the Assembly by the Inmarsat General Counsel on the issue of provisional application referred to international law and practice, and the recommendations of the Meeting of Legal Experts and the IWG as in paragraph 48 above. He advised that Inmarsat Assembly decisions are normally taken by a two-thirds majority of Parties present and voting, and that a consensus was not legally required under the Inmarsat Convention or Article 25 of the Vienna Convention. However, as it would be practicably impossible to reverse the restructuring, once implemented, it would be desirable to have the support of two-thirds of the Parties

³⁰ Report of the Twelfth Session of the Inmarsat Assembly (Assembly/12/20), Secs. 8.3 and 8.4.

representing two-thirds of the investment shares to ensure that the amendments would ultimately enter into force.³¹

56. Prior to the Thirteenth Session, there was uncertainty about the actual outcome because, in addition to domestic legal obstacles for some Parties, there was a possibility that other Parties which were not fully satisfied with the form of the restructuring might decide on policy grounds to oppose a decision on provisional application, at least until their concerns had been addressed. As it turned out, however, there was an awareness that the form of the new structure represented a compromise among widely differing Party positions. As most Members were generally in favour of restructuring, no Party was, at the final hurdle, prepared to obstruct the process by formally objecting to a consensus decision.

57. Thus it was that the Thirteenth Assembly Session decided, by consensus, to apply the amendments provisionally on a date to be finally determined by the Council. In so doing, the Assembly emphasized the need for rapid action so as to ensure the future commercial viability of the Organization and thereby guarantee the continuity of the GMDSS services and other public service obligations.

58. The Assembly also noted: "that, in accordance with such decision, Parties "will conduct themselves, in their relationships with each other, the Organization and the Company, within the limits allowed by their national constitutions, laws and regulations."³²

59. This acknowledgment by the Assembly reflected the practice of other IGOs, cited in paragraphs 21-23 above. It had the practical effect of enabling the amendments to the Convention and Operating Agreement to take effect on the international law plane, while permitting individual Parties to continue to participate in the Inmarsat Organization, consistently with their national law, even if this meant that the amendments had not yet been accepted in their national law.

60. Many Party Representatives at the Assembly made statements on this issue during the discussion which preceded the decision, and many attached written statements to the Assembly Report. Practically all statements supported the provisional application decision, though a few indicated that the question of provisional application was within the discretion of each Party or was a domestic matter.³³

B. Commercial Implications of Provisional Application

61. The Director General advised Parties during the consultations that from a commercial perspective, there should be no doubts as to the legal effect of the provisional application decision. The legitimacy of the transfer of the assets and business, the disposition of the Signatories' investment shares, financial relations with banks and others, and negotiations with

³¹ Briefing Notes on Provisional Application to the Assembly by the Inmarsat General Counsel (Assembly/13/Report, Annex 12).

³² Report of the Thirteenth (Extraordinary) Session of the Inmarsat Assembly, Sec. 4.2.

³³ *Supra* note 33, Annexes 11 and 13-31.

future investors and stock exchanges could have been seriously compromised if the legal basis of the provisional application decision was considered to be insecure. The treaty expert who advised Inmarsat on provisional application, also confirmed that as a matter of public international law, the restructuring amendments, as provisionally applied, were effective for the purpose of restructuring the Organization and transferring its business, assets and liabilities to the Companies.³⁴

62. As a precaution, the Master Transition Agreement (MTA) signed between Inmarsat, the Companies and the Signatories, which was one of the key restructuring instruments, required the Signatories to waive any rights they might have to challenge the basis of the provisional application decision.

63. Notwithstanding the waiver, provision was made in the MTA for the situation in which either the amendments to the constituent instruments did not enter into force within 15 years of the restructuring date, or any Party to the Convention or a Signatory disputed the provisional application decision under the international arbitration procedures contained in the Convention. If, as a result, the provisional application was determined to be ineffective, the parties to the MTA are required to agree on arrangements to enable the Organization to fulfil its public service obligations under the Convention. This provision was included for completeness and as a long-term precautionary measure. However, as a consequence of the transfer of the assets and business to the Companies, the disposition of Signatories' shares, and the expected dilution of share ownership upon the raising of new capital, it would be extremely difficult if not impossible to completely undo the restructuring.³⁵

VIII. Conclusions

64. In answering the legal questions set forth in Section IV above, the Assembly has demonstrated that it has inherent authority to decide on provisional application of substantial amendments to its constituent instruments, effectively transforming the structure of the Organization. It also demonstrated that a consensus decision was sufficient for that purpose. Precedents in other IGOs, including Inmarsat's own prior practice, supported these decisions, as did the legal advice obtained and legal writings cited.

65. It was unnecessary to decide whether, in the face of an objection by a Party in the Assembly to a consensus decision, the Assembly would have had authority to take the decision on provisional application by a two-thirds majority of Parties present and voting. The expert legal opinion obtained and the advice of the Inmarsat General Counsel, as referred to in paragraphs 32-37 and 55 above, was that a decision by such a majority would be valid under the Inmarsat Convention, but the issue is not one that has been legally tested.

66. It is apparent that a dissenting Party can block a consensus decision, and, if unsatisfied with a subsequent qualified majority decision, could

³⁴ Letter dated 4 November 1998 from Professor S. Rosenne to the Inmarsat General Counsel.

³⁵ Master Transition Agreement between the International Mobile Satellite Organization, the new Companies and the former Inmarsat Signatories, Clause 13.

withdraw from the Organization. However, for the reasons given in paragraphs 41-42 above, it would not have been possible for the Party to remain in the Organization under the Convention, as unamended, thereby creating a dual regime.

67. The effect of a future successful legal challenge to the validity or effectiveness of the provisional application decision, or of the eventual non-entry into force of the amendments, is uncertain at this stage, except that the provisions of the Master Transition Agreement referred to in paragraph 63 above would come in to play.

68. The Inmarsat Assembly's decision has substantially furthered State practice in relation to the doctrine of provisional application as it applies to the amendments to constituent instruments of an IGO. It extends the scope of prior State practice, as referred to in the precedents in Section V above, including the practice at the ITU, because of the very substantial nature of the amendments which had the effect of totally transforming the Organization. It demonstrated that such a decision could be taken by consensus. There is no evidence yet that any Party or Signatory, or indeed a third party transacting with the Companies, intends to challenge the legal effect of the decision.

69. It is an encouraging postscript to this article that the Inmarsat Assembly decision was followed soon after by a comparable decision in another ISO. In May 1999, the Eutelsat Assembly of Parties adopted a Resolution authorising the provisional application of substantial restructuring amendments to its own constituent instruments in terms similar to the Inmarsat decision, including the acknowledgement about subordination of the decision to the national laws in respect of individual Parties.³⁶ This State practice augurs well for IGOs wishing to overcome lengthy amendments procedures in their constitutions in order to adapt themselves rapidly to changing economic and social conditions.

70. Finally, it may also be recalled that the successful outcome of the provisional application issue was due in large measure to the support of many Inmarsat Party and Signatory Representatives and their legal advisers, and to the Chairmen of the Assembly, Council, IWG and Meetings of legal experts. Also acknowledged is the expert advice of Professor S. Rosenne of Israel, whose opinions cited in this article played an important part in the resolution of the issue, the advice given to Inmarsat by Mr A. Noll, former ITU Legal Adviser about relevant ITU practice, and to the research undertaken and legal advice given by the Inmarsat General Counsel, Mr. A. Auckenthaler to the Assembly and other bodies.

³⁶ Eutelsat Assembly of Parties, Twenty-Sixth Meeting, Record of Decisions, (AP26-3E), para. 9 (y) and Attachment 2.

EVENTS OF INTEREST

A. PAST EVENTS

U.N. REPORTS

I.

REVIEW OF THE WORK OF THE UNITED NATIONS COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE AND ITS SUBCOMMITTEES, 1999

Natercia F. Rodrigues and Charles W.N. Davies***

1. The Scientific and Technical Subcommittee prepares for the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) and adopts the Technical Report on Space Debris

Introduction

The thirty-sixth session of the Scientific and Technical Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) was held in Vienna, Austria from 22-26 February 1999, under Chairmanship of Dietrich Rex (Germany).

The session was attended by 48 of the 61 member States of the Subcommittee¹ by twelve specialized agencies and other international

* BLC., LLB., Associate Political Affairs Officer, United Nations Office for Outer Space Affairs. The Subcommittees' reviews are the author's personal views and do not reflect the position of the United Nations Office for Outer Space Affairs.

** Associate Political Affairs Officer, United Nations Office for Outer Space Affairs. The reviews of COPUOS and that of UNISPACE III are the personal work of the author and do not represent the official position of the United Nations.

¹ Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, China, Colombia, Cuba, Czech Republic, Ecuador, Egypt, France, Germany, Greece, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Italy, Japan, Kenya, Lebanon, Mexico, Morocco, The Netherlands, Nigeria, Philippines, Poland, Portugal, Republic of Korea, Romania, the Russian Federation, South Africa, Spain, Sudan, Sweden, Syrian Arab Republic, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America, Uruguay, Venezuela and Viet Nam.

organizations² and seven observers.³

Following the recommendation of the Committee on the Peaceful Uses of Outer Space at its forty-first session in 1998, the Subcommittee, on an exceptional basis,⁴ met for only five days. As result of the Scientific and Technical Subcommittee acting as the Advisory Committee for the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III), and in view of the work that would be before the Subcommittee, a number of its regular agenda items were suspended by agreement at this year's session.⁵ The Subcommittee considered the following agenda items: "Preparations for the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) by the Advisory Committee for UNISPACE III" (Agenda item 3), "Space Debris" (Agenda item 4) and the "United Nations Programme on Space Applications and the coordination of space activities" (Agenda item 5). The Subcommittee also considered its schedule of work for its thirty-seventh session under agenda item 6 entitled "Other matters".

² United Nations Scientific and Cultural Organization (UNESCO), International Telecommunication Union (ITU), World Meteorological Organization (WMO), European Space Agency (ESA), International Organization of Space Communications (INTERSPUTNIK), International Telecommunications Satellite Organization (INTELSAT), Committee on Space Research (COSPAR), European Association for the International Space Year (EURISY), International Academy of Astronautics (IAA), International Astronautical Federation (IAF), International Astronomical Union (IAU) and International Society for Photogrammetry and Remote Sensing (ISPRS).

³ Azerbaijan, Bolivia, Costa Rica, Finland, Peru, Slovakia and Tunisia.

⁴ The Committee agreed in 1998 that the duration of the sessions for the Committee and its two subcommittees in 1999 would be shortened, on an exceptional basis for that year only, so that the saving resulting from the shortening of the session could be utilized for the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III).

⁵ These included general exchange of views; matters relating to the remote sensing of Earth by satellite, including applications for developing countries; use of nuclear power sources in outer space; questions relating to space transportation systems and their implications for future activities in outer space; examination of the physical nature and technical attributes of the geostationary orbit and of its utilization and applications, including in the field of space communications, as well as other questions relating to space communications developments, taking particular account of the needs and interests of developing countries; matters relating to life sciences, including space medicine; progress in national and international space activities related to the Earth's environment, in particular progress in the International Geosphere-Biosphere (Global Change) Programme; matters relating to planetary exploration; matters relating to astronomy; and consideration of the theme fixed for special attention at the Scientific and Technical Subcommittee.

Discussion of the Substantive Items on the Scientific and Technical Subcommittee's Agenda

Preparations for the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) by the Advisory Committee for UNISPACE III (Agenda item 3)

In order to facilitate the work of the Advisory Committee, the Working Group of the Whole was reconvened under the Chairmanship of Ms. Ulrike Butschek (Austria) in the absence of Mr. Muhammad N. Shah (Pakistan). Most of the preparations for the Conference were conducted in the Working of the Whole and subsequently considered by the Advisory Committee.

As requested by the Preparatory Committee (Committee on the Peaceful Uses of Outer Space), the Advisory Committee and Working Group of the Whole had before them the revised draft report of the Conference which had been circulated to all member States of the Committee before the session of the Subcommittee and documents containing the recommendations from the regional preparatory Conferences for UNISPACE III.

The Working Group of the Whole carried out a comprehensive section-by-section examination of the revised text of the draft report and provided detailed comments. The Working Group also revised "The Vienna Declaration on Space and Human Development" and agreed that the recommendations of the regional preparatory conferences should be attached to it. Based on the comments received to these documents, the Office for Outer Space Affairs of the United Nations, acting as the executive secretariat of the Conference, was requested to prepare a revised version of the draft report of the Conference well ahead of the session of the Preparatory Committee in July 1999.

On the basis of proposals by the executive secretariat, the Working Group also considered and reached agreement on a number of organisational matters, agreement on the members of the Bureau,⁶ on the members of the Drafting Group,⁷ the allocation of the specific agenda items between the

⁶ The Working Group agreed on the following composition and distribution of offices for the Conference: for the Plenary: U. R. Rao (India) as President, Raimundo González (Chile) as Vice-President, Mohammed Aït Belaïd (Morocco) as Rapporteur-General; for Committee I, Dietrich Rex (Germany) as Chairman, Yuri Koptev (Russian Federation) as Vice-Chairman and R. A. Boroffice (Nigeria) as Vice-Chairman and Rapporteur; for Committee II, Shunji Murai (Japan) as Chairman, Vladimír Kopal (Czech Republic) as Vice-Chairman and Luiz Gylvan Meira Filho (Brazil) as Vice-Chairman and Rapporteur; and for the Technical Forum, Peter Jankowitsch (Austria) as Chairman.

⁷ The Working Group agreed that the following individuals, together with any additional representatives of the Member States invited by the Rapporteur-General (Chairman of the Drafting Group) would constitute the Drafting Group:

Plenary, Committee I and Committee II, on the indicative work schedule for the Conference and the arrangements made by the executive secretariat on the activities of the Technical Forum.

Space Debris (Agenda item 4)

At this year's session, the Subcommittee was tasked with the adoption of its Technical Report on Space Debris which is the product of a three-year work plan on specific aspects of space debris.

In 1994, at its thirty-first session, the Subcommittee decided to include this item for consideration in its agenda because it was concerned about the effect which space debris could have on the space environment and on the operation of spacecraft. It was agreed that it was important to have a firm scientific and technical basis for future action on the complex attributes of space debris.

As a result, the Subcommittee decided at its 1995 session to focus on understanding research related to space debris, including debris measurement techniques; mathematical modelling of the debris environment; characterizing the space debris environment; and measures to mitigate the risks of space debris, including spacecraft design measures to protect against space debris; and adopted a multi-year work plan, from 1996-1998, for consideration of these specific topics. In 1996 the Subcommittee agreed to prepare a technical report on space debris which would be structured according to these specific topics, in order to establish a common understanding which could be the basis for further discussions on space debris in the Committee on the Peaceful Uses of Outer Space.

The Subcommittee completed its three-year work plan in 1998 including the preparation of the draft Technical Report on Space Debris. However it was agreed that the report should be adopted at its 1999 session so that the report could undergo editorial revision and also be considered by relevant organisations such as the Inter-Agency Space Debris Coordination Committee (IADC) and the International Academy of Astronautics (IAA) during the inter-sessional period. During this period of the Subcommittee, the changes and amendments proposed by Canada, France, Germany, the United Kingdom and the IADC were incorporated and an introduction and annex containing a list of documents relevant to the subject of space debris were also prepared by the Secretariat.

After considering comments submitted during this year's session by the drafting group on the draft technical report, the Subcommittee

Dawlat Hassen (Egypt) and Mongezi Tshongweni (South Africa), for Africa; Sridhara Murthy (India) and Mazlan Othman (Malaysia), for Asia and the Pacific; Dumitru Prunariu (Romania) and Arif Mehdiyev (Azerbaijan), for Eastern Europe; Alejandra Bonilla (Colombia) and Raúl Peláez (Argentina), for Latin America and the Caribbean; and Gabriella Venturini (Italy) and Lynn. F. Cline (United States of America), for Western Europe and other States. The names of the representatives of Malaysia and Latin America and the Caribbean were identified at a later stage and were confirmed by the Preparatory Committee in July 1999.

adopted the draft Technical Report on Space Debris together with the proposed changes. It was agreed that the Technical Report would be submitted to the Committee on the Peaceful Uses of Outer Space at its forty-second session, in July 1999. The Subcommittee also agreed that the Technical Report be widely distributed, including making it available at the UNISPACE III Conference and to the Legal Subcommittee at its thirty-ninth session, in 2000.

United Nations Programme on Space Applications and the coordination of space activities within the United Nations system (Agenda item 5)

In considering this agenda item the Subcommittee had before it the report of the United Nations Expert on Space Applications⁸ in which the 1998 activities as well as the immediate plans for 1999 of the United Nations Programme on Space Applications are reported.⁹

The Subcommittee commended the work¹⁰ accomplished by the Programme, and again expressed concern over the limited financial resources available for carrying out the Programme and appealed to member States to support the programme through voluntary contributions.

Other Matters (Agenda item 6): Review of the Future work of the Subcommittee

In considering its agenda for the year 2000, the Subcommittee noted that its thirty-seventh session should also include the regular items which had been suspended for one year only as result of the UNISPACE III Conference.¹¹ However the Subcommittee agreed that the structure of its agenda should be reviewed to take into account the recommendations which emerged from UNISPACE III Conference. Some delegations also felt that the agenda needed to be modified to include discussions on possible new agenda items. During the session, a working paper¹² was presented by

⁸ UN Document A/AC.105/715.

⁹ The Programme not only organises a number of workshops, seminars, training courses or symposia on a yearly basis but also coordinates long-term fellowships for in-depth training provided by member States and provides technical advisory services in support of projects on regional space applications. The Programme also plays an important role in assisting with the establishment of regional centres for space science and technology education in existing national or regional educational institutions in developing countries.

¹⁰ Numerous activities were held over the period of 1998 and early 1999. An enumeration of these activities and the sponsoring member States and/or organisations can be found in paragraph 47 of the report of the expert.

¹¹ UN Document A/AC.105/719 paragraph 79.

¹² UN Document A/AC.105/C.1/L.227.

Germany on behalf of Austria, Canada, China, Czech Republic, France, Greece, Hungary, Italy, Japan, Morocco, Romania, Russian Federation, Spain, Sweden, Turkey, United Kingdom of Great Britain and Northern Ireland and the United State of America, in which a new agenda structure was proposed for the Subcommittee for its 2000 and 2001 sessions. The sponsors of the working paper felt that the proposed new structure would limit the amount of information not related to agenda items which was reported at the sessions and would facilitate the consideration of the results and recommendations of the UNISPACE III Conference.

Although consensus could not be reached to adopt the structure as proposed in this working paper, the Subcommittee agreed that the proposal contained in that document could be the basis for consensus being reached at the forty-second session of the Committee on the Peaceful Uses of Outer Space, in July 1999.¹³

Special presentations

Presentations were made by F. Alby (France), P. Moskwa of the Inter-Agency Space Debris Coordination Committee (IADC) and W. Flury of ESA on the complex issue of space debris and the solutions currently being adopted at national and international levels at this year's session of the Scientific and Technical Subcommittee.

2. The Legal Subcommittee establishes a working group for the item "Review of the status of the five international legal instruments governing outer space" and looks at revitalising its work by considering the restructuring of its agenda

1. Introduction

The thirty-eighth session of the Legal Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) was held in Vienna, Austria from 1-5 March 1999. In view of the decision by the Committee to save resources for the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III), to be held in July 1999, the Legal Subcommittee met back-to-back with the Scientific and Technical Subcommittee, for a shortened period of 5 days.

As result of the resignation of Mr. Václav Mikulka of the Czech Republic as Chairman of the Legal Subcommittee, Mr. Vladimír Kopal of the Czech Republic was elected to complete the three-year term of office vacated by Mr. Mikulka. This appointment was made subject to the retroactive approval of the Committee on the Peaceful Uses of Outer Space at its forty-second session, held in July 1999.

¹³

The main objection raised against the proposed structure was the inclusion of the agenda item on the geostationary orbit under single issues which would automatically fall away after the year 2000.

The session was attended by 47 of the 61 member States of the Subcommittee¹⁴ by six representatives of specialized agencies and other international organizations¹⁵ and seven observers.¹⁶

The Legal Subcommittee continued its consideration of the "Question of Early Review and Possible Revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space" (agenda item 3) as well as "Matters relating to the Definition and Delimitation of Outer Space and to the Character and Utilization of the Geostationary Orbit, Including Consideration Of Ways and Means to Ensure the Rational and Equitable Use of the Geostationary Orbit without Prejudice to the Role of the International Telecommunication Union" (agenda item 4). In addition the Legal Subcommittee entered its second year of discussion of the new agenda item, "Review of the Status of the Five International Legal Instruments Governing Outer Space" and among other issues, had the opportunity to look at possible new agenda items and the Subcommittee's contribution to the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) under the agenda item 6 entitled "Other matters".

2. Discussion of the Substantive Items on the Legal Subcommittee's Agenda

Item 3: "Question of Early Review and Possible Revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space"

Very little debate took place on this item at this year's session. Delegations noted the necessity for exercising safety precautions with the use of nuclear power sources and reaffirmed that this issue should continue to be discussed. As had been agreed by the Subcommittee at its 1998 session, discussion of this matter was suspended in the working group for this year's session and it was agreed that the working group for

¹⁴ Argentina, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, China, Colombia, Cuba, the Czech Republic, Ecuador, France, Germany, Greece, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Italy, Japan, Kazakhstan, Kenya, Lebanon, Mexico, Morocco, The Netherlands, Nigeria, Phillippines, Poland, Republic of Korea, Romania, the Russian Federation, South Africa, Spain, Sudan, Sweden, Turkey, Ukraine, the United Kingdom of Great Britain and Northern Ireland, the United States of America, Uruguay, Venezuela and Viet Nam.

¹⁵ International Telecommunication Union (ITU), United National Educational, Scientific and Cultural Organization (UNESCO), European Space Agency (ESA), the International Astronautical Federation (IAF), International Organization of Space Communications (INTERSPUTNIK) and International Telecommunications Satellite Organization (INTELSAT).

¹⁶ Bolivia, Costa Rica, Peru, Slovakia, Tunisia, the United Arab Emirates and the permanent observer for the League of Arab States (LAS).

its thirty-ninth (2000) session would also not be reconvened pending progress being made by the Scientific and Technical Subcommittee. This decision was made without prejudice to the possibility of reconvening the working group should sufficient progress be made by the Scientific and Technical Subcommittee at its 2000 session. It was also agreed that the item should remain on the Legal Subcommittee's agenda for debate in the plenary.

Item 4: "Matters Relating to the Definition and Delimitation of Outer Space and to the Character and Utilization of the Geostationary Orbit, Including Consideration of Ways and Means to Ensure the Rational and Equitable Use of the Geostationary Orbit without Prejudice to the Role of the International Telecommunication Union"

As customary, this item was discussed under two different headings, namely, the question of the definition and delimitation of outer space and the rational and equitable use of the geostationary orbit. The Working Group on this item was re-established under the Chairmanship of Mr. Daniel Eduardo Amigo from Argentina.

During the plenary discussion, member States concentrated on the issue revolving around the rational and equitable use of the geostationary orbit. Although no consensus could be reached on this issue, the most significant development at this year's session was the Subcommittee's agreement that the working paper which had been submitted by the Czech Republic to the Scientific and Technical Subcommittee entitled "Examination of the physical nature and technical attributes of the geostationary orbit; examination of its utilization and applications, including, inter alia, in the field of space communications, as well as other questions relating to space communications developments, taking particular account of the needs and interests of developing countries"¹⁷ provided a scientific and technical basis for further discussion in this Subcommittee.

Nevertheless it was felt that a comprehensive analysis of the legal aspects of the geostationary orbit and the scientific and technical aspects of the geostationary orbit was required in one single document, that the analysis should take into consideration the regulations of the International Telecommunication Union (ITU) and that it should not be done on a fragmented basis.

Other considered views regarding the geostationary orbit which were expressed included:¹⁸ a) that the legal regime applying to outer space had been conclusively determined by the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, that the status of any satellite orbit, including the geostationary orbit, was therefore fully

¹⁷ UN Document A/AC.105/C.1/L.216.

¹⁸ UN Document A/AC.105/721, paragraphs 26-41.

covered by the provisions of that treaty and that as result of the recent amendment to article 44¹⁹ of its constitution, the ITU was the sole competent body responsible for regulating the use of radio frequencies and related allocation of orbital slots, including those in the geostationary orbit; b) that, while noting that work which the ITU had undertaken with respect to the scientific and technical aspects of the utilization of the geostationary orbit, the Legal Subcommittee was in fact the competent body to discuss the legal and political issues of the geostationary orbit as this had been clearly mandated by the General Assembly; and c) that there was a need to establish a *sui generis* legal regime for regulating access to and use of the geostationary orbit for all States, taking into particular account the needs of developing countries.

In the Working Group the discussion took place in a less enthusiastic manner. Following a proposal from the delegation of Colombia the Subcommittee agreed that, in order to rejuvenate the discussion on the geostationary orbit, the Secretariat, in cooperation with the ITU, should prepare an update of a working paper prepared by the Secretariat in cooperation with ITU entitled "An analysis of the compatibility of the approach contained in the working paper entitled 'Some considerations concerning the utilization of the geostationary orbit' with the existing regulatory procedure of the International Telecommunication Union relating to the use of the geostationary orbit" which had been submitted to the Subcommittee at its thirty-sixth session in 1997.²⁰

No substantive debate took place in the plenary or in the working group regarding the issue of the definition and delimitation of outer space.

*Item 5: Review of the Status of the Five International
legal Instruments Governing Outer Space*

The Legal Subcommittee first began its consideration of this item at its 1998 session. At this year's session the Subcommittee established a working group in accordance with the recommendations of the Committee on the Peaceful Uses of Outer Space and the proposed work plan for the agenda item which had been approved at its thirty-sixth session in 1997.²¹

¹⁹ The earlier text made reference only to the geostationary-satellite orbit. Article 44 of the ITU Constitution which concerns the "Use of the Radio-Frequency Spectrum and of the Geostationary-Satellite and other Satellite Orbits" now reads: "Member States shall bear in mind that radio frequencies and any associated orbits, including the geostationary-satellite orbit, are limited natural resources and that they must be used rationally, efficiently and have equitable access to those orbits and frequencies, taking into account the special needs of the developing countries and the geographical situation of particular countries."

²⁰ UN Document A/AC.105/C.2/L.205.

²¹ General Assembly Official Records, Fifty-second session, Supplement No.20 A/52/20.

Member States once again used the opportunity of the plenary sessions to report on the status of, and further intended actions concerning their accession to the five international treaties. Although the Legal Subcommittee noted that the purpose of this item was not to re-open substantive debate on, revise or amend the five international treaties some delegations felt that the discussions into the status of the treaties might lead to the identification of additional agenda items aimed at a substantive review of the instruments.

Various member States approached the discussion of this item by proposing practical solutions to improving specific aspects of adherence to the five international instruments, in particular the Liability Convention, the Registration Convention and the Moon Agreement. Other States, however, disagreed with this approach, stating that the five international treaties were by their nature interdependent and that a holistic approach should be taken in their review.

Following the Legal Subcommittee's request at its thirty-seventh session in 1998, that the Secretariat prepare a list of international agreements and other available legal documents relevant to space related activities and indicating where they might be found, a preliminary list was submitted by the Secretariat to the Legal Subcommittee for comments.²²

The Working Group, which was convened for the first time at this year's session, began its deliberations under the Chairmanship of Vassilios Cassapoglou of Greece. Following lengthy discussions, the Working Group reached consensus and made the following recommendations on measures to be adopted in order to achieve the fullest adherence to the five international instruments governing outer space:²³

a) States that have not yet become parties to the five international treaties governing outer space should be invited to consider ratifying or acceding to those treaties in order to achieve the widest applicability of the principles and to enhance the effectiveness of international space law;

b) States should be invited to consider making a declaration in accordance with operative paragraph 3 of General Assembly resolution 2777 (XXVI), binding themselves on a reciprocal basis to the decisions of the Claims Commission established in the event of a dispute in terms of the provisions of the Convention on International Liability for Damage Caused by Space Objects; and

c) the issue of the strict compliance by States with the provisions of the international legal instruments governing outer space to which they

²² This list which contains Multilateral and Bilateral agreements as well as National Laws and Legislation was subsequently improved by the secretariat and has been issued in a document entitled *International Agreements and other available Legal Documents relevant to Space-Related Activities*. The document is a useful research tool as it indicates where one would be able to locate the various documents listed therein, for example, government depositories, libraries and the internet.

²³ UN Document A/AC.105/721, Annex II, paragraph 13.

were currently parties should be examined further with a view to identifying measures to encourage full compliance, taking into account the interrelated nature of the principles and rules governing outer space.

Agenda Item 6 : Other Matters

Three distinctive issues were considered under agenda item 6 at this year's session of the Legal Subcommittee, namely: new items for the Legal Subcommittee Agenda, the contribution of the Legal Subcommittee to the UNISPACE III Conference and the Subcommittee's future work.

i) New Items for the Agenda

As in previous years the Subcommittee continued its consideration of new agenda items for possible inclusion in the agenda of the Legal Subcommittee. The Subcommittee was reminded of the items which had already been proposed. These included the following: a) the commercial aspects of space activities, b) review of existing norms of international law applicable to space debris, c) legal aspects of space debris, d) comparative review of the principles of international space law and international environmental law, e) review of the Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting and the Principles Relating to Remote Sensing of the Earth from Outer Space, with a view to possibly transforming these texts into treaties in the future, f) improvement of the Convention on Registration of Objects Launched into Outer Space, and g) examination of the agreement relating to the implementation of Part XI of the United Nations Convention of the Law of the Sea of 10 December 1982 as a model to encourage wider accession to the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies.²⁴

In addition, following the proposal by the Chairman of the Legal Subcommittee at last year's session, discussions were continued, at the Committee on the Peaceful Uses of Outer Space, on the proposal submitted by Germany on behalf of the member States of ESA and States having signed cooperation agreements with ESA, as contained in section III of its working paper (A/AC.105/C.2/L.211/Rev.1), in order to reach consensus on including the item proposed in the working paper as a new item on the

²⁴ These proposals were made by the delegations of Argentina, the Czech Republic, Chile, Greece, The Netherlands and Germany (on behalf of the member States of ESA and States having signed cooperation agreements with ESA). At this session the delegation of Argentina also presented a work plan for the item, entitled "Commercial aspects of space activities". The work plan notes that the purpose of the item is to identify the commercial aspects of space activities, to study the various domestic legislation governing these activities and finally to negotiate and prepare draft guidelines which could apply to resolution of conflicts arising from commercial activities in outer space. This study is to be implemented over a three year period. See UN document A/AC.105/721, Annex III.

agenda of the Subcommittee. Furthermore, as a result of the consultations which took place at the forty-first session of the Committee, in 1998, inter-sessional consultations among interested delegations were held in Bonn, Germany, in December 1998 resulting in provisional agreement being reached on the introduction of a new agenda item, entitled "Review of the concept of the 'launching State'." The results of these consultations were circulated at the Legal Subcommittee for information purposes only. The formal presentation of the results would be placed before the Committee at its forty-second session, in July 1999 for its consideration and adoption.²⁵

*ii) Contribution of the Legal Subcommittee to the
UNISPACE III Conference*

Following the recommendation by the Legal Subcommittee that the Chairman of the Legal Subcommittee should report to UNISPACE III on the work of the Subcommittee, including its past achievements, current work and new challenges in the development of space law, a draft text was prepared and presented to the Subcommittee for its comments. Although the Chairman advised the Subcommittee that the report was to be the report of the Chairman and not of the Legal Subcommittee he welcomed all comments and assured the Subcommittee that these would be taken into account in the final preparation of the document. States who had made substantive comments, in particular to the section on future challenges, were requested to submit their suggestions in writing to the secretariat.²⁶

iii) Future work

The issue of the Subcommittee restructuring its agenda to revitalise and enrich its work was debated intensely by the Subcommittee at this year's session. The delegation of Germany presented on behalf of Austria, Canada, France, Greece, India, the Netherlands, Sweden and the United States, a working paper entitled "Revision of the agenda of the Legal

²⁵ See UN document A/AC.105/L.217.

²⁶ The comments received from the Subcommittee on this document were incorporated and the report was produced in UN document A/CONF.184/4.

Subcommittee.”²⁷ Although there was general agreement that the work of the Legal Subcommittee should be structured in a more productive manner, the proposal was found unacceptable by, in particular, the States with an interest in the discussions of the geostationary orbit as the proposal indicated that the item on the geostationary orbit would eventually be eliminated from the Subcommittee’s agenda. Some delegations also raised objections against the categorization of the agenda items.

Although the Subcommittee could not reach agreement on the proposal contained in the document presented by Germany, some delegations felt that the proposal and also the discussion and views expressed during the Subcommittee meeting constituted a basis upon which the Committee on the Peaceful Uses of Outer Space could work on, at its 1999 session, towards restructuring and revitalising the work of the Legal Subcommittee.

3. Space Law Symposium

In view of the shortening of the session of the Legal Subcommittee and that the International Institute of Space Law (IISL) was organising an eight-session workshop on space law as part of the UNISPACE III Technical Forum, no IISL/European Centre for Space Law (ECSL) symposium was held at this year’s session. The Subcommittee however agreed that the IISL and ECSL should again be invited to hold a symposium on space law at the thirty-ninth session of the Subcommittee.

3. *Forty-second session of the Committee on the Peaceful Uses of Outer Space (14-16 July 1999, Vienna, Austria)*

I. Introduction

This was a shortened session of the Committee, held from 14 to 16 July 1999 in Vienna, Austria, immediately before the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III). Although the session lasted only three days, most of which was taken up with revisions to the UNISPACE III draft report, the Committee reached consensus on revised agenda structures for both the Scientific and Technical and the Legal Subcommittees. The Committee also

²⁷ See UN document A/AC.105/C.2/L.217 and Corr. 1.

²⁸ Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, China, Colombia, Cuba, Czech Republic, Ecuador, Egypt, France, Germany, Greece, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Italy, Japan, Kazakhstan, Kenya, Lebanon, Mexico, Morocco, Netherlands, Nigeria, Pakistan, Philippines, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Senegal, South Africa, Spain, Sudan, Sweden, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America, Venezuela and Viet Nam.

agreed on a new agenda item based on a three year work plan for the Legal Subcommittee to review the concept of the "launching state" referred to, for instance, in the Liability and Registration Conventions.

Attendance was high, very likely because the session took place only a few days before UNISPACE III, which was also in Vienna. Forty-nine²⁸ of the Committee's 61 Member States, 18 observer states²⁹ and 11 international organizations³⁰ attended.

This session of COPUOS was chaired by Professor U.R. Rao of India. The Vice-Chairman was Raimundo González of Chile. The Committee approved the appointment of Mr. Mohammed Aït Belaïd (Morocco) to replace Professor M. Kabbaj (Morocco) as Second Vice-Chairman/Rapporteur of the Committee.

II. Preparations for UNISPACE III

This session of COPUOS included the final session of the Preparatory Committee for UNISPACE III, which was responsible for finalizing organizational matters and the draft report of the Conference. In fact, most of the COPUOS session was spent reviewing the draft report of UNISPACE III and the draft Vienna Declaration on space and human development.

III. Future Work of the Scientific and Technical Subcommittee

A. Space Debris

The Scientific and Technical Subcommittee finished its multi-year work plan on space debris and produced the final version of its Technical Report on Space Debris³¹ this year. COPUOS agreed, without discussion, that the Scientific and Technical Subcommittee should continue to consider space debris as a priority agenda item. The focus of debate, as it has been

²⁹ Algeria, Azerbaijan, Belarus, Bolivia, Costa Rica, Finland, Guatemala, the Holy See, Luxembourg, Malaysia, Namibia, Peru, Saudi Arabia, Slovakia, Sri Lanka, Thailand, Tunisia and the United Arab Emirates.

³⁰ The United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Meteorological Organization (WMO), the International Atomic Energy Agency (IAEA), the European Space Agency (ESA), the International Mobile Satellite Organization (IMSO), the International Organization of Space Communications (INTERSPUTNIK), the Committee on Space Research (COSPAR), the International Academy of Astronautics (IAA), the International Astronautical Federation (IAF), the International Astronomical Union (IAU) and the International Society for Photogrammetry and Remote Sensing (ISPRS).

³¹ U.N. Doc. A/AC.105/720.

in previous years, was whether the Legal Subcommittee should begin to consider issues related to space debris. France submitted a working paper on behalf of twelve other countries³² proposing that COPUOS invite the Legal Subcommittee to start reviewing the applicability of the existing outer space treaties to space debris. Some other COPUOS members, however, considered it premature for the Legal Subcommittee to begin considering matters relating to space debris before the Technical Report drafted by the Scientific and Technical Subcommittee had been analyzed thoroughly by national space organizations and industry.

The Scientific and Technical Subcommittee will discuss some existing debris mitigation measures next year. A working paper submitted by the United States of America proposed that the focus of discussion under the agenda item on space debris should be a review of international application of the International Telecommunication Union (ITU) standards and Inter-Agency Space Debris Coordination Committee (IADC) recommendations concerning the disposal of satellites in geosynchronous orbit at the end of their useful life. COPUOS adopted the proposal without a great deal of discussion.

B. Revised Agenda Structure for the Scientific and Technical Subcommittee

The Committee adopted a revised agenda structure for the Scientific and Technical Subcommittee, based on a proposal by Germany made in the Scientific and Technical Subcommittee session earlier this year.³³ The proposal for revising the agenda of the Scientific and Technical Subcommittee was considerably less contentious than the proposal for revising the agenda of the Legal Subcommittee³⁴ and in the end the Committee adopted the proposal with only two changes. One was the inclusion of the United States proposal to consider international application of ITU standards and IADC recommendations concerning disposal of satellites in geosynchronous orbit.³⁵ The second was the inclusion of "matters relating to the remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment" in the agendas for 2000 and 2001.

³² Austria, Canada, Czech Republic, Germany, Greece, Hungary, India, Italy, Poland, Portugal, Sweden and United Kingdom of Great Britain and Northern Ireland.

³³ On behalf of Austria, Canada, China, Czech Republic, France, Greece, Hungary, Italy, Japan, Morocco, Romania, Russian Federation, Spain, Sweden, Turkey, United Kingdom of Great Britain and Northern Ireland and United States of America. Report of the Scientific and Technical Subcommittee on the work of its thirty-sixth session, U.N. Doc. A/AC.105/719 (1999), para. 85.

³⁴ See *infra* Section IV.B.

³⁵ See *supra* Section III.A.

The revised agenda structure allows agenda items to be discussed either as "work plans", as "single issues/discussion items", or as "regular items." There is no specific procedure under the new agenda structure to add new "regular items", which would require a consensus of the Committee to remove at a later point. "Matters relating to remote sensing of the Earth by satellites, including applications for developing countries and monitoring of the Earth's environment" is currently a "regular" agenda item. Items discussed as single issues or as work plans will be removed at the end of the year or the work plan unless there is consensus to keep them on the agenda.

The only work plan adopted at present relates to nuclear power sources; space debris and the geostationary orbit are "single issues/discussion items". The new agenda structure leaves space in the agenda for the year 2001 for new work plans and single-year discussion issues (that may be renewed by consensus), to be decided upon in 2000. The new agenda structure may have the effect of allowing the Subcommittee to respond rapidly to recent developments in space technology and policy. For instance, the agenda states that new single issues/discussion items and multi-year work plans started in the year 2001 should be based primarily on the results of the recent Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III), held from 19 to 30 July, 1999 in Vienna, Austria.

IV. Future Work of the Legal Subcommittee

A. *New Legal Subcommittee Agenda Item on the "Concept of the Launching State"*

COPUOS adopted a three-year work plan for the Legal Subcommittee to review the concept of the "launching state", as used, for instance, in the Liability and Registration Conventions. The new agenda item was proposed initially in the 1998 session of COPUOS, which recommended that Member States organize inter-sessional consultations on the topic.³⁶ These consultations were held in December 1998 in Bonn, Germany. The report of these consultations,³⁷ recommending that the concept of the launching state be reviewed in the Legal Subcommittee under a three-year work plan, was adopted by COPUOS without change. Under the work plan, the Legal Subcommittee will hear presentations on new launch systems and ventures in the year 2000, will review the concept of the launching state in the year 2001, and will discuss measures to increase application of and adherence to the Liability Convention and the Registration Convention in 2002.

³⁶ Report of the Committee on the Peaceful Uses of Outer Space, General Assembly Official Records, Fifty-third Session, Supplement No. 20, U.N. Doc. A/53/20 (1998), paras. 150-52.

³⁷ U.N. Doc. A/AC.105/L.217.

B. Revised Agenda Structure for the Legal Subcommittee

This session of the Committee adopted a revised agenda structure for the Legal Subcommittee in addition to the revised agenda structure for the Scientific and Technical Subcommittee, despite the very short session of COPUOS this year and differences in opinion existing at the start of the session regarding discussion of the geostationary orbit. Under the revised agenda structure, based on a proposal submitted by Germany at this year's session of the Legal Subcommittee,³⁸ agenda items may be "regular items", "single issues/discussion items" (discussed for one year only unless renewed, and decided upon the preceding year), "items discussed under a multi-year work plan", or "future issues".

The proposal for a revised agenda structure was designed to revitalize the work of the Legal Subcommittee. For instance, by considering agenda items more regularly as single issues/discussion items and multi-year work plans, the new structure could enable the Legal Subcommittee to respond to recent developments in space technology and policy, including those discussed in the Scientific and Technical Subcommittee, while maintaining the possibility of long-term discussion of issues of special or continuing importance to COPUOS.

The most significant difference of opinion regarding the new agenda structure concerned discussion of the geostationary orbit. The original working paper submitted by Germany to the Legal Subcommittee earlier in 1999 made this agenda item a "single issue/discussion item"³⁹ that would be removed from the Subcommittee's agenda at the end of the year unless renewed by consensus. A number of countries were unable to accept this short timescale and insisted that the item related to the geostationary orbit be kept on the agenda of the Legal Subcommittee until it has been resolved to the satisfaction of all COPUOS Members. The Committee decided to make "Matters relating to the definition and delimitation of outer space and to the character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union" a "regular item" on the agenda of the Legal Subcommittee.

³⁸ On behalf of Austria, Canada, France, Greece, India, the Netherlands, Sweden, and the United States of America. Report of the Legal Subcommittee on the work of its thirty-eighth session (15 March 1999), U.N. Doc. A/AC.105/721, Annex IV.

³⁹ Report of the Legal Subcommittee on the work of its thirty-eighth session (15 March 1999), U.N. Doc. A/AC.105/721, Annex IV, section A.II.3.

V. Summary

The three day session of COPUOS concluded discussion of all the items on its much-reduced agenda for this year. Significant progress included final review of the draft Vienna Declaration on space and human development and the draft report for UNISPACE III, adoption of a three year work plan for the Legal Subcommittee to review the concept of the launching state, and adoption of new agenda structures for both Subcommittees.

II.

THIRD UNITED NATIONS CONFERENCE ON THE EXPLORATION AND PEACEFUL USES OF OUTER SPACE (UNISPACE III), VIENNA, AUSTRIA, 19-30 JULY 1999

Charles W.N. Davies

I. Introduction

The international community has cooperated in the peaceful uses of outer space, through the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) since 1958, the year following the launch of Sputnik I and the start of the space age. Since that time, the United Nations has organized three global conferences on the exploration and peaceful uses of outer space, the first (UNISPACE) in 1968, the second (UNISPACE 82) in 1982 and the third, the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) in 1999, held from 19 to 30 July at the United Nations Office at Vienna.

The symbolic importance of UNISPACE III being held in 1999, as we near the start of our first full century in space, was well recognized, with the major theme of the Conference "Space benefits for humanity in the Twenty-first Century". Near the end of the millennium, the Conference gave the international community an opportunity to review important achievements of space technology and policy in the past half century, such as the contribution of international space law towards promoting the peaceful use of outer space. The international community also needed to meet again to discuss fundamental changes in space, in particular with respect to the space environment, space commercialization, and the opportunities presented by new space technology. Attendance was high, the highest of any of the three United Nations space conferences; ninety-eight United Nations Member States, two non-Member States, one international entity, thirty-two international organizations, and a large number of national and non-governmental organizations attended.⁴⁰

The significant increase in private commercial interest in space and the greater availability to the public of products such as satellite broadcasting and positioning, raise entirely new policy issues for national governments and international organizations. For instance, the greater availability of space technology now compared to seventeen years ago

creates excellent opportunities for development, especially in areas that are remote or have poor ground infrastructure. UNISPACE-III allowed the international community to consider how new and improved space products could be used by a greater part of the world's population, in particular in developing countries.

Reflecting their increasing activity in the field of space technology, non-government organizations and space-related industry were invited to make a contribution to UNISPACE III, the first major United Nations conference for which this was the case. In addition, thirty-eight workshops on space science and policy, collectively called the "Technical Forum", were held during the course of the Conference, enabling all participants to become fully up-to-date with recent developments in various fields.

The major resolution of UNISPACE III is entitled "The Space Millennium: Vienna Declaration on space and human development". The larger section of the Vienna Declaration consists of a global strategy for using space technology to address global challenges in the future. This strategy is organized into a number of specific areas in which space technology should contribute to human well being, including environmental protection, one recommendation being to develop and implement further the Integrated Global Observing Strategy, public health, for instance through tele-medicine, rural education, disaster relief and search and rescue. The Vienna Declaration recommends that the international community promote knowledge of space technology and its applications, improve space activities within the United Nations system, and promote international cooperation in the peaceful uses of outer space.

The following is a brief summary of UNISPACE III decisions regarding "International Space Law". It discusses the more explicitly legal decisions of the Conference, found in the "International Space Law" section of the main body of recommendations from the Conference, entitled "Harnessing the potential of space at the start of the new millennium". Although most issues discussed in the Conference have legal aspects, a comprehensive account of UNISPACE III is not possible within the confines of this paper.

II. Preparations for UNISPACE III

The decision to hold the UNISPACE III Conference was taken by the United Nations General Assembly in 1997.⁴¹ Although the resolution left the Legal Subcommittee of COPUOS without a formal role in preparations

⁴¹ United Nations General Assembly resolution 52/56, 10 December 1997, paragraph 23.

for the Conference,⁴² the Subcommittee participated in preparations by submitting comments to COPUOS on the content of the draft report, in particular its section on "International Space Law".⁴³ In addition, the Chairman of the Legal Subcommittee presented a report to UNISPACE III detailing recent issues addressed and progress made by the Legal Subcommittee.⁴⁴

III. Findings and Recommendations of UNISPACE III related to International Space Law

International space law proved an issue of great interest to delegates both in preparations for UNISPACE III and during the Conference. This was so despite the relatively small volume of recommendations made by the Conference on this topic. In addition, the Workshop on Space Law in the Twenty-first Century at UNISPACE III⁴⁵ was extremely well attended, with over 120 participants, and ultimately made a very significant contribution to the recommendations concerning International Space Law in the UNISPACE III Report.⁴⁶

A. *Status of International Space Law*

The Conference's review of space law⁴⁷ was discussed in great detail in both the Preparatory Committee and in Committee I of

⁴² The General Assembly decided that the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) would act as the Preparatory Committee for UNISPACE III, responsible among other things for preparing a draft report, declaration, and rules of procedure for the Conference. The Scientific and Technical Subcommittee of COPUOS acted as the Advisory Committee for UNISPACE III, responsible for reporting to the Preparatory Committee on organizational matters for the Conference.

⁴³ Report of the Legal Subcommittee on the work of its thirty-eighth session (1-5 March 1999), A/AC.105/721, paras. 66-71.

⁴⁴ A/CONF.184/4.

⁴⁵ Part of the UNISPACE III "Technical Forum", this Workshop was one of 38 organized to inform participants in the Conference about space technology and policy. The Workshop was organized by the International Institute of Space Law and the United Nations Office for Outer Space Affairs.

⁴⁶ Six of eleven recommendations on international space law in the UNISPACE III Report were based on proposals from the Workshop on Space Law.

⁴⁷ UNISPACE III Report, *supra* note 40, paras. 361 to 365.

UNISPACE III,⁴⁸ with the major concern being to make the text of the Report as accurate and comprehensive as a short summary allows. The review details the five treaties and five sets of legal principles governing outer space activities, developed progressively under the auspices of the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS).

The Conference also applauded the development of outer space law in COPUOS and other intergovernmental organizations, regional groups, individual states, and private entities. The Conference noted in particular progress made recently in COPUOS and the International Telecommunication Union (ITU) with regard to the status of the geostationary orbit.⁴⁹

B. Issues and Objectives

The recommendations of UNISPACE III on International Space Law, in the subsection entitled "Issues and Objectives"⁵⁰ fall roughly into two groups. Some recommendations aim to improve existing international space law and law-making institutions. Others aim to address new legal problems created by the growth in space technology and commercialization.

*I. Improving Existing International Space Law
and Law-making Institutions*

a. Existing Outer Space Treaties

A number of UNISPACE III recommendations aim to improve existing international space law, in particular the five treaties and five sets of legal principles. States considered the decreasing levels of ratification of subsequent outer space treaties to be a "pressing concern". At present, ratifications for the outer space treaties decline from 95 for the 1967 Outer Space Treaty to 40 for the 1975 Registration Convention and only nine for the 1979 Moon Agreement. States noted that COPUOS is currently undertaking a review of the status of the five outer space treaties and is soliciting the views of states on obstacles to ratification of these

⁴⁸ The UNISPACE III Plenary created two Committees, Committee I and Committee II, responsibilities of which included preparing draft recommendations of the Conference in specific areas. Among other areas, Committee I was assigned responsibility for recommendations regarding International Cooperation, including International Space Law. Committee I submitted its draft recommendations to the UNISPACE III Plenary, which on the final day of the Conference approved the report of UNISPACE III.

⁴⁹ See *infra* Section III.B.2.b.

⁵⁰ UNISPACE III Report, *supra* note 40, paras. 366-376.

treaties.⁵¹ In particular, the "apparent lack of international consensus on the principles embodied in the Moon Agreement" was considered to be of special concern, since commercial exploitation of resources on the Moon may become feasible in the near future. The UNISPACE III report recommends that issues relating to the "ownership and equitable access" to resources on the Moon and other celestial bodies "should require further substantial consideration and study". In addition to expressing concern about ratifications to the outer space treaties, States considered actual adherence to international space treaties to be "less than optimal".

b. The Committee on the Peaceful Use of Outer Space (COPUOS)

Referring to significant advances in space technology and commercial activity in space over the past decade, States recommended that the work of COPUOS be "strengthened in order to meet the requirements of a rapidly advancing field of human activity". This year's session of the Committee adopted a new agenda structure for both its Scientific and Technical and its Legal Subcommittees. The new agenda structure explicitly includes single-year or multi-year discussion items into the agenda of the Subcommittees, which may have the effect of allowing the Committee to respond more rapidly to changes in space activity. States declared that the changes "should make it possible to enrich considerably the work of the Legal Subcommittee." As an additional measure for the future, based on a proposal from the Workshop on Space Law, States called on the Legal Subcommittee and the Scientific and Technical Subcommittee to "meet in such a way that there can be more interaction involving the work of those two bodies".

2. New Legal Issues presented by Commercialization and Technological Development

a. Space Commercialization and New Space Technologies

The "considerable growth" in private commercial activity in the past decades creates a whole set of new international law issues. These issues might include: What country's law governs a private contract regarding operation of a satellite in outer space (that is not present within any national jurisdiction and perhaps was not when the contract was signed)? Who is responsible for damage caused by a satellite that was built by a corporation from one country, launched by a corporation from a second country in a third country, and is now owned by a corporation by a fourth country (or perhaps a joint venture between corporations in several different countries)? What rules apply regarding insurance and bankruptcy? Should the international community coordinate capacity

⁵¹ See, e.g., Report of the Legal Subcommittee on the work of its thirty-eighth session (1-5 March 1999), A/AC.105/721, paras. 42-55.

building in developing countries by private space-related organizations, and if so how?

The outer space treaties address a number of these issues to some degree. All of the treaties were drafted, however, at times when private commercial activity in space was at much lower levels than now, and before space technologies such as satellite positioning and telecommunications had become so widely available. While reflecting positively on the development of international space law in recent years into a body of principles and norms now considered "well-established", States noted that "creative solutions" would be needed to address these new, highly technical issues.

States recommended that attention should be paid to issues of liability and security, and requested COPUOS to consider "the issue of security of ownership regarding spacecraft". The UNISPACE III report also requests Member States to consider developing effective dispute settlement mechanisms.

Particular space technologies often raise specific legal issues. For instance, increasing public reliance on meteorological and positioning services may raise legal concerns specific to those technologies.

The recommendations of UNISPACE III did not address legal aspects of new space technology in great detail, but did recommend that COPUOS "analyse the desirability of drafting new legal instruments relating to various space applications, taking into particular account the commercial growth of some of those applications". Based on a proposal from the Workshop on Space Law in the Twenty-first Century, States made special reference to satellite navigation systems, recommending that COPUOS "consider legal and other aspects relevant to Global Navigation Satellite Systems (GNSS)".

b. The Space Environment

Just over forty years after humans launched the first spacecraft, outer space has now become a limited natural resource with respect to many of its most useful applications. The International Telecommunication Union (ITU) has for a number of years assigned geostationary orbital positions⁵² and frequency bandwidths among States. UNISPACE III recommended that COPUOS "also consider the legal issues regarding low-

⁵² The geostationary orbit is an orbit on the plane of the Earth's equator. A satellite in that orbit would have a period of twenty-four hours. Satellites in geostationary orbit therefore remain approximately above the same point on the Earth's surface although, like satellites in any other orbit, they circle the Earth in response to the gravitational field of the Earth as a whole. Geostationary satellites have special value, especially to telecommunications, by virtue of their fixed location. Since the location of any geostationary orbital position is fixed above a point on the equator, geostationary satellites may have particular value to equatorial countries.

Earth orbits (LEOs), taking into account recent changes in the ITU convention concerning the status of LEOs as limited natural resources", recognizing that areas of space closest to the Earth are now also becoming crowded.

Increasing activity in space is also creating a number of environmental problems. One serious concern is the proliferation of space debris, a variety of now unusable fragments from past and present space missions that are in orbit around the Earth. Because of their high speed, even very small particles of space debris only a few millimeters across can threaten the lives of astronauts and seriously damage spacecraft; entire defunct spacecraft create a greater threat (although they are smaller in number and more easily tracked). States requested at UNISPACE III that COPUOS to "give attention to various aspects of space debris". In fact, COPUOS decided just before UNISPACE III to continue its work on space debris following adoption by the Scientific and Technical Subcommittee this year of the Technical Report on Space Debris,⁵³ a very significant event in international efforts to control space debris.

IV. Summary

International space law was one of the most actively debated fields in the UNISPACE III Conference, although only a few of the recommendations of the Conference deal explicitly with this subject. Most important recommendations of the Conference relating to space law aimed 1) to promote recognition of and adherence to international space law, 2) to improve the workings of the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) and its two Subcommittees, and 3) to meet legal challenges created by new space technology and increased commercial space activity.

OTHER REPORT

IISL Colloquium, 4-8 October 1999, Amsterdam

INTRODUCTION

The 42nd Colloquium on the Law of Outer Space was opened by the President, Dr. N. Jasentuliyana, on 5 October 1999. The colloquium was attended by over 75 participants, and many excellent papers were presented. Discussion took place during a separate session and provided an occasion for lively debate on the most topical current space law issues.

A Dinner for IISL Members and Guests was graciously offered by the International Institute of Air and Space Law and the Law Faculty of Leiden University on 7 October at the beautiful restaurant "Allemaansgeest" outside Leiden. Over 120 persons attended, including a great majority of the International Court of Justice, as well as officials of the IAF and IAA. Judge Schwebel, President of the Court gave a dinner speech on the activities of the Court. The finals of the 8th Manfred Lachs Space Law Moot Court Competition were also held on 7 October and took place in the Great Hall of Justice at the Peace Palace, The Hague. The competition was realized with the help of the International Court of Justice, in particular Judge Vereshchetin, the Leiden Institute of Air and Space Law, the European Centre for Space Law (ECSL), and the Association of US Members of the IISL (AUSMIISL). Preliminary competitions were held in Europe and the USA, and the winners of those preliminaries met in the final round in The Hague. The University of Paris XI (France) and Vanderbilt University (USA) competed in the case concerning the "Mor-Toaler Sea-Launch project" (Brezonec vs. Mastodonia). The honourable court was composed of Judge Guillaume (Presiding), Judge Koroma and Judge Vereshchetin. The team of Vanderbilt University won the competition. Its member Alan Mingledorff was also the Best Oralist. Its other member was Bill Wade. The team of the University of Paris won the award for the Best Memorial. Its members were Irene Aupetit and Mickael Torrado. The case was written by Prof. Kerrest de Rozavel with Prof. Lyall. The case and the written briefs will be published in the IISL Proceedings. The finals of the 9th Competition will be held in Rio, October 2000, after regional preliminaries to be held in the Spring of 1998 in Europe, the USA and a new round to be held in Australia for the Australasian region. The case concerning a Nuclear Powered Satellite (Homeria v. San Marcos) was written by L. Tennen and distributed to the universities. An IISL Lifetime Achievement Award was presented to Prof. Diederiks-Verschoor; and a Distinguished Service Award was presented to Dr. Terekhov. A total of 3 institutional members and 8 individual members was elected by the Board. Two new members were elected to the Board of Directors, Ms. P. Sterns (USA) and Dr. Ram Jakhu (Canada), and several Board members were re-elected for a new term, among whom Dr. N. Jasentuliyana, who was also re-elected as President of the IISL.

SESSION 1: Legal aspects of space station utilization

Chairmen: *Prof. I.Ph. Diederiks-Verschoor & Prof. H.A. Wassenbergh*Rapporteur: *Dr. O.M. Ribbelink*

Dr. W. Stoffel and Prof. Dr. Ing. W. Ley wrote the paper "Legal Aspects of Commercial Space Station Utilization: Views And Interim Results of the Project 2001 International Working Group On Space Stations". Dr. Stoffel gave an overview of the history of "Project 2001", then briefly discussed some key issues which the Working Group will specifically address: the regulation (national and international) of access to the ISS, the legal status of the space station crew, the impact of international competition law, and patents/intellectual property rights. At a later stage institutional aspects and questions of liability will be raised. ISS augmentation and the use of OS beyond the ISS will be discussed at a Working group meeting in June 2000 (Berlin) or at the final conference of the Project in May 2001 (Cologne)

Dr. André Farand spoke about "Legal Environment for the Exploitation of the International Space Station (ISS)" and pointed to the Three-layer Legal Framework which has been put in place for the ISS. The first layer is the 1998 IGA, which will replace the 1988 IGA. The second layer is formed by the 4 Memoranda of Understanding, that is, between each designated Cooperating Agency and NASA. The third layer, the implementing arrangements, builds on the broad framework established by the IGA and MOUs. With this comprehensive legal regime the States concerned have created links between the ISS modules and personnel, and their territories. Interestingly, the development of ISS rules calls for harmonisation of the national laws of the European Partner States. The most urgently needed, but also very complex, document is a Code of Conduct for astronauts, which is foreseen in art. 11 of the IGA, now under discussion.

Dr. E.A. Frankle presented his paper on "Legal Aspects of Space Station Utilization". The General Counsel of NASA emphasized the US position towards the commercial use of the ISS. The US has the right to use an estimated 75% of the total resources of the ISS, of which share NASA has committed that 30% will be commercial use. NASA, which will take care of the implementation, has already received over a dozen entrepreneurial proposals. A major barrier to commercial success is the (general) US rule of full-cost recovery, through a user charge, of the use or support provided to a person or entity, e.g. transportation by Space Shuttle. In July 1999 a legislative proposal has been put forward to US Congress for a demonstration program with a flexible price structure, which also allows NASA to reinvest receipts under the program. It has been proposed to get the US Government out of the management of the ISS utilization share, via the creation of an NGO, somewhat similar to the Hubble Space Telescope construction. Dr. Frankle concluded with the statement that NASA is very committed to an aggressive and innovative commercial utilization approach for the US share of ISS resources.

Prof. T. Kosuge spoke about the "US Commercial Space Act of 1998 and its Implications on International Space Station", a topic closely related to the previous paper, but from a non-US point of view. He discussed the active role of NASA in the efforts to privatise the exploitation of the earth orbital space, as demanded by US Congress through the Commercial Space Act of 1998. It is believed that free and competitive markets are the most promising for the economic development of this orbital space, for which the ISS is constructed. According to Kosuge, the efforts of NASA will have both positive (costs, service, efficiency) and negative (ISS will never become fully commercial) results. Also, with regard to commercialization and privatization there is still a wide gap between the accelerating US efforts to shift from a government dominated space economy to a private-led space economy on the one hand, and the situation in Japan and Europe on the other; Europe does not proceed quickly due to industrial politics, and many of Japan's activities are still government-led.

Prof. G. Catalano Sgrosso's paper was entitled "Legal Status of the Crew in the International Space Station" and dealt with the need for the classification of the legal status of Astronauts in space law. In air law specific and detailed rules exist for both crew and passengers, but in space law only the general (romantic) notion of "envoy of mankind" can be applied, which is mostly relevant in relation to assistance and rescue operations. Nevertheless, in the past, national (and some international) rules had been developed for the crew of a space vehicle. But for the ISS new approaches have been chosen. Not only has ESA developed an Astronaut's Handbook, but all ISS partners are jointly developing the ISS Crew Code of Conduct. Each astronaut will have rights (health, safety, compensation for damage) and duties (observe civil jurisdiction, submit to criminal jurisdiction, protect intellectual property). This is a very important innovation which offers the possibility to develop further rules for the regulation of the life of space station crew members. It is hoped that the Code of Conduct will be ratified before the first US/RF crew will arrive.

The paper by *Dr. M de Esquivel de Cocca* was read by *Dr. O. Fernandez Brital*. "International liability for damages caused by persons or space objects in outer space or on celestial bodies to persons, properties or environment in outer space or celestial bodies" discusses the adaptation of concepts such as, *inter alia*, "launching state" and "space object", to better cope with today's and tomorrow's reality.

Ms. H. Walker spoke on "Potential Patent Problems on the ISS". In her very clear presentation she discussed the potential conflicts that may emerge between the patent regimes of the three "countries" with a laboratory aboard the ISS (USA, Japan and Europe). These may e.g. result in infringement on experiments due to jurisdictional arrangements, the determination that the subject of an invention does not qualify for a patent, or that the specific ISS laboratory environment prevents the invention from being patentable. This may be caused by different criteria applied by the three patent offices, e.g. the US knows "broad" patents while Japan and Europe use much "narrower" patents; that work is actually advancing through building on already patented material; or even that there may be different owners of the same patent due to different regulations. Apart

from that there are specific problems with the "unpatentability" of some inventions, esp. regarding discoveries ("man-made" versus natural), biotechnology, and computer programming. In addition there are specific problems regarding the patentability directly related to the ISS: disclosure, the obviousness of the advancement, the establishment of industrial uses, as well as the identification of who has the right to submit an invention for patent. Possible solutions are a new ISS agreement (not likely), cross-waivers pre-empting liability in infringement suits, or a legislative fix introducing a compulsory licensing system.

Dr. O. Fernandez Brital then presented his own paper on "Space Station and Debris" (no paper received by Rapporteur). His suggestion was that the General Assembly of the UN accept a Resolution in which it is declared that the deposition of debris in space amounts to appropriation and is therefore a violation of the 1967 Outer Space Treaty.

Dr. G.P. Zhukov's paper dealt with "Registration and Jurisdiction Aspects of the International Space Station". He announced the first ever publication in Russia of a textbook on space law, of which he was a large contributing author, and then spoke about registration and jurisdiction issues relating to the ISS, and the differences resulting from the approach of the ISS either as one single object or as a multiple object. While reminding the audience that ESA has accepted the Registration Convention, he announced that Intersputnik is now also showing signs of willingness to accept the Convention.

Dr. Ram Jakhu gave a brief outline of his (unfinished) paper on "National Implementation of the 1998 IGA on the ISS", which deals with the complications resulting from the implementation of the 1998 IGA in national legislation, with specific reference to Canada. As it turns out implementation will be necessary for practically all provisions.

SESSION 2 *New developments relating to legal aspects of telecommunications*

Chairmen: *Dr. Lubos Perek* and *Ms. Marcia Smith*

Rapporteur: *Ms. J. Clayton Townsend*

Dr. K.-U. Schrogl presented a status report, written with *Ms. I. Polley*, entitled "Project 2001: Status Report of the Working Group on Telecommunications", which is a part of the extensive University of Cologne study, Legal Framework for the Commercial Use of Outer Space, which will culminate in 2001. The Group is examining whether the current legal regime is adequate and what is required in terms of level and forum for the future legal framework. Five topics were identified for further study: licencing issues, frequency issues, trade issues, international service providers and globalization issues.

Dr. Schrogl also presented the paper by *Dr. L. Martinez*, "Legal implications of globalization issues, from e-commerce to the internet". The paper examined whether e-commerce conducted over Internet-based satellite links affects nation-state and IGO compliance with obligations under the outer space treaties. The author concluded that as yet the

Treaties do not pose a hindrance to the legal expansion of satellite based e-commerce, but certain conflicts can be expected to arise.

Dr. J. Heilbock mentioned the competition between terrestrial and satellite-based mobile communications and discussed the innovations of the "Satellite Component of the Third Mobile Communications Generation", which can provide, inter alia, universal personal telecommunications, a platform for a virtual home environment, extended roaming modalities and a sophisticated smartcard for authentication purposes. He explained the developments within ITU leading to the third mobile communications standard IMT-2000, described its service capabilities, identified potential network operators and reported on licencing developments in the US and Europe.

Perhaps the most controversial paper was presented by *Mr. R. M. Moore*, "Piercing the diplomatic veil: encouraging commercial satellite systems to lead negotiations over Radio Frequency Spectrum by reforming ITU Regulations." He suggested that the responsibility for coordinating a satellite system through the International Telecommunications Union should be left to the entity that proposed the system in the first place and not to the local regulator of the country that supports that entity's interests. Further, he advocated that the ITU should allow only one delegate per nation to attend the World Radio Conference.

In his paper "Should GNSS standards that are uniform for all GNSS users be established, or are unimodal standards satisfactory?", *Prof. P. Larsen* gave an extensive overview of the regulatory environment for global navigation system providers for the US, Russia, Europe, and INMARSAT. He stressed the multifaceted character of GNSS and pointed out the risk of conflict between the different standards, and suggested better international coordination and common GNSS regulations. He indicated that agreement seemed to exist at the Unispace III conference about the desirability of standardizing all the uses of GNSS.

Mrs. R.M. Ramírez spoke about "Stratospheric stations: do their operation cause sovereignty problems?" According to the technical and regulatory considerations included in the ITU Radio Regulations (RR), it is not possible to face sovereignty problems, as the hypothesis that could cause such problems and that could avoid them are identified:

* Platform installation. - Registration before ITU, according to the procedure established in the RR, causes that the countries that could be affected shall be notified of the technical characteristics and of course they could object the installation and point out that in case that a stratospheric station is installed, the existing and the projected services could be protected.

* Provision of telecommunication services. - The rule is that every country provides the services within its territory and in the case that an operator intends to provide services in other country, he shall submit to the legislation of such country and be previously authorized for that. For the case of Mexico and the US, *Mrs. Ramírez* held that the best mechanism for two or more countries to establish operation terms and conditions of any kind of telecommunication services could be concentered through the execution of international agreements.

Ms. M. Rothblatt's paper on "Legal aspects of geostationary platforms in the Stratosphere" suggested that space law should apply to stratospheric platforms which can operate at 20-30 km altitude, such as Sky Station. She held the view that if an object can function like a satellite as a result of helium pressure instead of orbital mechanics, then it should be treated like a satellite (and space law applied). There is no reason why space law would apply to a GSO satellite at 40,000 km or to a system like Iridium at 100 km, but not to a system operating at 20 km. She proposed to extend the scope of space law down to the 20 km region above controlled airspace where the satellites of tomorrow will reside.

Dr. L. Perek concluded the session by discussing the role of the ITU in radio communications and suggested greater coordination regarding the geostationary orbit by UN/COPUOS. COPUOS, he said, should focus on upholding the scientific basis of discussions; supporting and maintaining an orderly and rational conduct of space activities; supporting a wider adherence of Member States to instruments of space law, especially the Registration Convention; supporting mitigation of risks posed by space debris and the systematic use of disposal orbits; and establishing a closer liaison with the ITU.

SESSION.3 - *Legal Implications of Expanding Privatisation in Space*

Chairmen: *Prof. J.F. Galloway* and *Mrs. T.L. Masson-Zwaan*

Rapporteur: *Mr. P.H. Tuinder*

Ms. S.U. Reif presented the paper written with *Mr. B. Schmidt-Tedd* on "Views and interim results of the 'Project 2001' Working Group on Privatisation; Legal Framework for Expanding Privatisation in Space". The aim of the group was to examine which legal consequences and risks are more or less common to the different approaches taken by governmental agencies in order to privatise space activities. Attention will be given to the interaction between international and national space law as well as to topics like civil liability and the protection of intellectual property rights, in relation with the increasing involvement of private entities in outer space activities.

Mr. B. de Montluc's paper was entitled "Recent efforts to enhance new relationships with industry in France" and described the changing relationship between CNES and the French space industry and who set out in an overview the various partnerships of CNES with industry. *Mr. de Montluc* submitted that these partnerships were fully in line with the trend in the world of privatising governmental operational activities like Intelsat and Eutelsat and the operation of the space shuttle and space station.

Prof. Lyall, in his presentation entitled 'privatisation, jurisprudence and space', emphasised the importance of the rule of law and the limits that should be set to privatisation and competition. International space law as a body of law containing idealistic principles such as 'the use of space for the benefit of all mankind' could 'suffer' from the interaction with Adam Smith's Realism. After giving an overview of the thoughts of the

realist school, Prof. Lyall concluded that legal rules and effective mechanisms are needed to ensure that the goal of space as a benefit of all mankind is accomplished.

Mrs. Clayton Townsend ("Property rights and space commercialisation") gave an overview of space law provisions that relate to exploration and utilisation of the moon and other celestial bodies and concluded that there is no prohibition of such activities. However, she found a host of unanswered questions especially for the protection of the investor in space while at the same time also protecting the rights of mankind to accessible outer space environments in the future. She analysed relevant terrestrial laws such as (US) mining laws, the law of the Sea and the Antarctic Treaty and concluded that these do not provide for an optimal legal environment to open space for exploitation. According to Ms. Clayton the question is when and what property rights will exist for outer space and this question should be addressed in a timely fashion before problems arise. The goal of such a regime would be to continue to preserve outer space for peaceful purposes and for the benefit of all mankind while at the same time not discouraging private enterprise.

Mr. M.M. Smith presented the paper written with *Ms. P. Dasch* and *Ms. A. Pierce* ("Conference on space property rights; next steps"), and reported on a conference held in 1998 by the National Space Society. The authors hold that it is an established rule of space law that private property rights are not forbidden. They believe that the term "national appropriation" in article 2 of the OST only applies to governments, not private entities. They continue to observe that the Moon Agreement does explicitly prohibit private property ownership on any celestial body in the solar system, but that this instrument is "of passing technical interest" and "generally regarded as a dead letter". The 1998 Conference called for a regime for private property rights, in order to reduce any remaining uncertainties for private investors. A new treaty superseding the Moon Agreement is one option. Another is a multilateral agreement among space powers, or else, states could proceed unilaterally to recognize claims by their citizens.

The paper by *Mr. D. O'Donnell* ("Comity in Space") promoted the establishment of a government entity in space, in order to fill the current "political void" and create comity, which would lead to full faith and credit. He proposed the "Regency of united societies in space" or ROUSIS and held that this might provide a way to escape extinction of the human race. Comity should be understood as "courtesy" and Mr. O'Donnell also gave his views on how to apply the concept of "space money" as a means to further develop outer space.

Mr. B. Smith addressed the issue of "Recent developments in patents for outer space" and gave an update of developments in the US and Europe. He illustrated the increasing industrial competition and the use of patents as a weapon in taking a market share, especially with respect to LEO's and MEO's. Mr. Smith underlined the importance of the Hughes case in which Hughes had won a multibillion-dollar infringement suit against the US Government. Also the case between TRW and ICO had been settled in a deal of more than 150 million USD. He then gave an overview of recently granted

space patents which demonstrate potential conflicts between the temporary monopoly granted to a patent owner and Arts. I & II of the Outer Space Treaty. Also, he submitted that these cases demonstrate that a US patent is the best (and at present the only) weapon for IPR 'wars'. The European Commission was also in the process of extending the Community Patent to 'inventions produced or used on board space-craft and satellites'. This, however, was delayed due to the collective resignation of the Commission in spring of this year. This according to Mr. Smith leads to a situation in which only the US can give protection to IP's in outer space and he hoped that soon other countries would follow which at least would result in the need for co-ordination. He, however, expressed the fear for a patchwork of national regimes that would lead to forum shopping. He concluded that in the actual situation it seems that the Outer Space Treaty does not effectively apply to intellectual property in outer space and that this constitutes an exception to the provisions of the OST.

Prof. C.Q. Christol analysed the Hughes case and its final outcome in his paper "Persistence pays off: the case of Hughes Aircraft Company v. USA, 1976-1999". He indicated that thirteen decisions have been produced in this litigation and gave a historical overview. Prof. Christol explained the various questions that had been addressed in this case, such as the patent doctrine of equivalents, the calculation of damages, or how the "eminent" domain interest of a state could override the interest of protection of innovative property rights which were developed to encourage creative enquiry and investigation. He also elaborated on the 1990 statutory revision by the USA of the meaning of 'inventions in outer space', in its new "Inventions in Outer Space Statute". The novelty of that Statute was its extraterritorial application to 'in outer space on a space object or component thereof under the jurisdiction or control of the United States'. The Hughes case represented the largest award ever made for a violation of patent rights in the US. The 1990 Statute was adopted to "afford" the protection of inventions occurring in space.

Mr. D. Lihani analysed the recent developments in the US with respect to export controls (especially the Cox Committee Report) and its impact on commercial satellite manufacturers and space launch providers. He gave a short historical overview of the Export Policies of the Reagan, Bush and Clinton administrations and commented the new regulations issued in March 1999 on regulations regarding the export licensing of communication satellites and technical data related to those satellites and launch vehicles. Pursuant to the Cox Report the licensing responsibility for commercial communications satellites was transferred from the Department of Commerce to the Department of State. Also additional export controls and approvals were implemented as requirements for launching US satellites from or by countries other than NATO or major non-NATO allies. Finally mandatory licensing for launch investigation is required as a result of these new regulations. Mr. Lihani concluded that while emphasising the importance of ensuring that no technology is transferred that may improve other nations' 'indigenous' ballistic missile and satellite capabilities it is important that the concerns of the commercial space

industry will be heard before the congress as they will have to prepare for inevitable delays and uncertainties.

The paper by *Dr. V. Veschunov* on "Lockheed Martin Intersputnik (LMI) as a form of commercialization in the activity of the intergovernmental satellite organization" was presented by *Dr. G. Zhukov*. The paper explained the characteristics of the joint venture agreed in 1997, a unique deal between an IGO and a transnational corporation. This project will allow Intersputnik to be a successful competitor on the worldwide satellite communications market.

Mr. M. Sato and his co-authors *Prof. T. Kosuge* and *Dr. P. van Fenema* gave an assessment of the "Legal implications of satellite procurement and trade issues between Japan and the United States". Authors discussed the so-called "Super 301 provision" of the 1988 US Omnibus Trade Act, according to which procurement by Japan of all satellites except R&D must be subject to open bidding. Since Japanese satellites are not internationally competitive, this has prevented them from buying Japanese satellites and has advantaged US satellites. Authors explained that although these discussions with the US were not legally binding, Japan had observed them. They gave an extensive overview of the practice and concluded that all satellite procurement contracts by the Japanese government and its related entities in the last decade had been awarded to the US satellite industry. Authors encouraged use of the dispute resolution procedures of the WTO established in 1995, and urged the WTO to review whether the current situation preserves equality between the two nations and is consistent with principles of justice.

Mr. M. Davis' paper was summarized by *Mr. R. Lee*. He presented the Australian Space Activities Act, which came into force in December 1998, and gave an overview of the Australian approach towards financial responsibilities and the sharing of risk between launch operators and governments and set out the differences with other national space laws. *Mr. Davis* concluded that due to the likely cost of insurance and the extent to which the Australian government would not seek indemnity from launch operators, Australia should be well placed to take advantage of commercial space launching projects.

Mr. W. Gaubatz in his presentation on "International certification for commercial reusable space transportation" set out the need for such standardised rules in order to protect public safety and safeguard property and environment, similar to the system applied in the field of air travel. This is a necessity in order for space travel to become generally accessible to the general public. He elaborated on the applicability of principles applied in the field of air transportation to space travel and recommended the adoption of a certification process for reusable space transportation systems encompassing type design and production certification, as well as spaceworthiness and commercial operator's licencing. He also recommended the IISL to establish a working group, 'International Spaceways Forum', to discuss these matters.

Mrs. Hofmann (formerly *Mrs. Hoskova*) presented an analysis of the Baikonur agreements. Baikonur is at present the only launching site that Russian space industry can use for manned missions, geo-stationary, lunar,

planetary, and ocean surveillance missions. Kazakhstan temporarily banned the launching of Russian rockets due to the Proton failure of July 1999 and due to the delay in the payment of the rates for the Baikonur lease. This raised the question of the legal status of the Baikonur Cosmodrome. Mrs. Hofmann then gave an overview of the two basic legal instruments that create the present legal regime of the Baikonur complex; viz.; the General Principles Agreement of March 28, 1994 and the Leasing Treaty of December 10, 1994. She concluded after having examined the main provisions of both instruments that a ban on the use of the launching site was not envisaged and that Kazakhstan was not justified in suspending the operation of the legal regime. Mrs. Hofmann noted, however, that due to the importance of the space facilities both Parties settled their dispute very quickly in July 30, 1999 and this proved that the legal regime was fully capable of coping with such a complex situation.

Finally, *Dr. Gál* presented his paper on "International Law and domestic laws governing commercial space activity by space stations". He discussed notions such as 'space station', 'commercial', 'national' or 'international' space station, 'jurisdiction and control', and the application of domestic laws. He stressed the necessity to elaborate a uniform civil code or at least principles of civil law for outer space and foresaw a major role for lawyers in regulating commercial space activity.

SESSION 4: Other issues of space law, including legal aspects of launching space objects from non-terrestrial sites

Chairmen : *Dr. L. Tennen* (USA) and *Prof. J. Monserrat Filho* (Brazil)

Rapporteurs: *Mrs. M. Mejía-Kaiser* (Mexico) and *Mrs. S. Reif* (Germany)

"Project 2001: Status Report on the Interim Results of the Working Group on Launch and Associated Services" was presented by *Mr. Ph. S. Makiol* and co-authored by *Mr. G. Gruber*. The presentation gave account of legal questions raised in this Working Group of the research project on the Legal Framework for the Commercial Use of Outer Space initiated by the Institute of Air and Space Law of the University of Cologne and the German Aerospace Center (DLR). The issues with which the Group will be dealing more thoroughly, encompass licensing procedures and conditions as well as questions of liability and responsibility, insurance, safety, international trade, and security with respect to Launch Services. A Workshop to take place in Bremen, Germany, on 19 January 2000 was announced as a next step.

Mr. E. A. Frankle introduced his and *Mr. E. J. Steptoe's* paper on "Legal Considerations Affecting Commercial Sea Launches From International Territory". Main point of the authors was that critical issues (liability, safety, insurance and financial requirements, etc.) can and should effectively be addressed and solved by means of national legislation, policy, and bilateral negotiations, in order to make risks foreseeable and to lessen that risk. The international legal regime did

sufficiently outline main responsibilities, although it is strained by the increase of complex structures of ownership, control, and territorial nexus - as in the Sea Launch project. The authors take the view that these complications were outweighed by a (further substantiated) public economic and legal self-interest of governments to license space activities and to establish safety and liability regulations, which should be further encouraged. As to Arts. VI and VII OST, authors suggested that although Art. VI supported that a state's failure to authorize and supervise gives rise to an international claim for breach of that responsibility, the Outer Space Treaty did not equate its Art. VI responsibility (and a state's exercise of responsibility by licensing a launch) with legal liability, since Art. VII OST did not confer liability upon the licensing state.

Also *Prof. A. Kerrest* in his "Remarks on the Notion of Launching State", considered that changes in the international framework were neither desired nor necessary. He emphasized two substantive issues with regard to the launching state concept, while several others are dealt with in his paper. The first issue concerned the change of registry in case of sale or lease of an object in space. The Registration Convention requires that a 'launching state' shall register a space object. The state whose entity acquires an object already in space - although this state is responsible for activities of its entity with all legal consequences - however might not be a 'launching state' and, thus, not be able to register the object and exercise jurisdiction and control nor be absolutely liable according to Art. VII OST and the Liability Convention. Prof. Kerrest proposed that this gap could be closed either by complex bilateral agreements or by an interpretation of the Registration Convention as to that registration by a 'non-original launching' state will be accepted, i.e. that a state could become launching state by its own recognition. The second issue he discussed was the plurality of launching states, which he did not regard as requiring legal change, since the intention of this concept is to protect potential victims and national states on the other hand are free to regulate which parties are going to bear the eventual financial burden.

Prof. J. Monserrat Filho shortly introduced the paper on "International Cooperation in Launching Facilities" by *Ms. V. Leister* and *Mr. M. F. Frazier*, who propose ways how launching facilities could become ventures for the benefit of emerging countries. The proposal is based on the framework of international space law, which purports international cooperation and the use of outer space for the benefit of all mankind. It first outlines national laws and regulations applying to space activities in Russia and the United States, with particular consideration of national export control regulations. While the on-going commercialization might enable developing countries to provide modern launch facilities fulfilling the needs of customers and public safety, the authors consider restrictions on the export of technologies as a bottleneck for the growth of activities and as preventing international cooperation. Based on a list of ideal requirements for a launch site, authors propose that developing countries set up commercial launch sites as "free economic zones" and apply the

revenues gained therefrom in new space technology initiatives. Public interest in their view could be safeguarded by an international audit system to be backed by the possibility to bring disputes to an arbitral tribunal.

The paper on "Legal Aspects of Launching Space Objects from Non-terrestrial Sites" presented by its author, *Dr. M. Longo*, examined launch activities from different maritime locations, but also the launch of space objects from the air and from outer space. She pointed to the significant role of national territory, which in her view leads to difficulties in identifying 'launching states' considering new launch possibilities. As concerns sea launches, those from platforms located in the territorial sea of a state raise no particular legal problems. With respect to launches from platforms located in an Exclusive Economic Zone (EEZ), *Dr. Longo* sustained that the coastal state should be held liable due to its exclusive jurisdiction on artificial installations in that zone under the UN Convention on the Law of the Sea 1982, while as to launches from the international sea, the platform's flag helped to identify the liable state. The state from whose airspace an object is launched might be considered as launching state with respect to air launches, a view that however is not shared by this author on the grounds that use of a states' airspace reflected a very low grade of participation. For activities within outer space, where no territorial link is involved, *Dr. Longo* found that victims had to rely on identifying a liable state on the basis of bilateral agreements, or to refer to the state which procured the launch or which owns a certain facility. In conclusion, she advocates to increasingly control these activities and their insurance, possibly by an international body.

Dr. O. Ribbelink and *Mr. P.H. Tuinder* elaborated on the issue of launching from a location in outer space - which can be regarded as a classical 'non-terrestrial' site - by confirming that "A Launch is a Launch is a Launch". They examined the issue in particular with regard to the applicability of the existing instruments of space law and the pertinent issues of liability, jurisdiction and control, etc. Considering the potential relevance of the altered facts in case of space launches, *i.e.* whether the launch location, the direction of the launch, or the location of the object's assembly should influence legal assessment, the authors came to the result that no serious problems were entailed, since the launch - even if conducted in outer space - would have to take place using certain facilities and thus a launching state could be identified in application of the general rules of the existing space law instruments.

Prof. J. Galloway stated in his paper "Globalization, Sovereignty and the Common Heritage of Mankind" that the Common Heritage of Mankind Principle (CHM) has not evolved beyond a philosophical principle, based in idealistic and liberal forces. The author commented that although the CHM existed for some time, its introduction in diplomacy and law has not been possible, because this concept was not strong enough to withstand the forces of capitalism, globalization and nationalism. He concluded that if

the idealistic and liberal forces prevail in the globalization era, then we shall see a reinforcement of Article II of the Outer Space Treaty and a more enlightened perspective on the Moon Agreement's CHM provisions.

Mr. Monserrat Filho presented the paper "The Challenge of World Knowledge Gap and Space Law". The author stressed that the economic gap between the developed countries and developing countries has widened in the last decades and he identified the unequal distribution of scientific knowledge as one of the main reasons. The author proposed that developed countries must support programs in developing countries to increase their capabilities to acquire, absorb, create and utilize knowledge. *Mr. Monserrat* stated that very often, space technologies are presented as ideal means to reduce the gap. Although at present space technology has not achieved the beneficial role it could play, he affirmed that there are already valuable co-operation agreements. *Mr. Monserrat* concluded that the cooperation in the space area may determine a positive change for new dynamics of global development, beneficial for all countries.

The paper "Emerging Principles of International Space Law" was presented by *Mr. Y. Hashimoto*. He proposed to review the International Space Law principles which were created in the cold war era. As a basis to start the discussion, the author suggested the introduction of emerging principles as "common interest of all mankind", "peaceful use" and "international cooperation" to serve as the basis for the effective regulation of space activities. *Mr. Hashimoto* concluded that these emerging principles may contribute to peace and security in the future.

Mrs. M. Rothblatt presented the paper "Exobioethics: Legal Principles for Interactions with Non-Terran Species". She addressed the fact that in the past months many planets have been discovered, raising the possibility that other life forms may have evolved outside the Earth. She asserted that humans from the Earth as a whole are not well prepared for the consequences of a contact with life forms outside our Planet. She stressed that there is a need to set international standards for contact activities with life forms outside the Earth.

Dr. G. Lafferranderie's paper was presented by *Mrs. T. Masson-Zwaan*. The paper, "What role for international organisations in the Century ahead?", examined the forms which international cooperation could take. The levels vary from worldwide, regional organizations such as UN or ESA, to states, to R&D and operational organizations, as well as to industry, users, etc.; moreover these each have their own internal rules and there are numerous bilateral agreements, making it difficult to get a clear view. There is an obvious need for clarity, and the author stressed the need for the exchange of information. He is not in favour of a world space organization, but encouraged accession to the space treaties and the adoption of national space legislation, and saw an important role of coordination for the UNCOPUOS in this regard.

The next presentation was given by *Mr. W. N. White Jr.* on "Implications of a Proposal for Property Rights in Outer Space". Mr. White proposed a regime of limited property rights in absence of territorial sovereignty. He commented that Article II of the Outer Space Treaty prohibits national appropriation of outer space but does not prohibit private appropriation. The author foresees that such a limited (in time) property rights regime would provide legal certainty to investors and entities participating in space activities and will also prevent military conflicts. The implementation of national and international registries would be advisable as well as a multilateral treaty to coordinate such rights. He concluded that real property rights will help the easy transition to self governance in outer space.

A background report on "Earth Observation and Data Policy in Europe: The Legal Issues - The EOPOLE concerted Action Project" was given by *Dr. F. G. v. d. Dunk*. The EOPOLE Project (Earth Observation Data Policy and Europe), has the aim to coordinate European national research in earth observation data policy as well as to recommend improvements to obtain a stronger user perspective, and to answer particular European needs as well as those of increased privatization. Dr. v. d. Dunk's paper is based on a pointed analysis of the legal background of earth observation activities and the European organizations involved in earth observation activities and their legal structure. He then lists legal issues raised such as licensing provisos, liability, intellectual property rights, and privacy of data, evaluating with regard to each issue potential solutions within the relevant existing structural framework(s) and possibilities or effects of harmonization. Stressing the meaning of law as an instrument of policy implementation, Dr. v. d. Dunk further informed that at the present stage of the EOPOLE analysis is concerned with arriving at an inventory of legal aspects, while a more detailed substance-oriented analysis will be carried out once the interests of various user communities have been clarified.

The presentation of *Prof. M. N. Andem* was entitled "Twentieth Anniversary of the 1979 Moon Treaty: The Legal Status of the Moon and Other Celestial Bodies Revisited in the Light of Commercialization of Outer Space Activities". Prof. Andem commented that the Moon Agreement has been the subject of discussion by eminent authorities and experts in space law, although it has binding force only for 9 countries, none of them space powers. In his paper, Prof. Andem reviewed the on-going discussions on the implementation of the 1979 Moon Agreement provisions.

The paper "Should the Lunar Crater SAHA be Accorded Special Legal Protection?" was presented by *Dr. P. Sterns & Dr. L. Tennen*. The authors continue to support the proposal by *Dr. Heidmann* on the Protection of Lunar Crater Saha. They commented that substantial progress was made in the international scientific community since its first discussion in 1994. Sterns and Tennen analyzed various aspects of the construction, operation and implementation of infrastructure necessary for a radio-astronomical facility under consideration of the Moon

Agreement provisions. They proposed that Crater Saha may be not only a candidate for consideration as "international scientific preserve", but also subject to an "international regime", as referred in Article 11.5 of the Moon Agreement.

Mr. Ricky J. Lee introduced his paper "Creating an International Regime for Property Rights under the Moon Agreement". Mr. Lee discussed that the international regime governing activities in outer space must be transformed allowing some form of property rights to protect and facilitate space ventures. He commented on the various valuable minerals and gases that may be found on the Moon, asteroids, as well as the use of energy from the Sun. The author commented that Article II of the Outer Space Treaty has not been interpreted as to limit appropriation of celestial bodies resources. He also mentioned that Article 11.3 of the Moon Agreement prohibits the creation of full property rights by national governments, but is not in prejudice to an international regime. He concluded that with the example of the adoption of a regime for the exploitation of deep seabed resources and with the willingness of developing countries to balance their economies in the new economic order, there is no better time to establish and implement a new legal regime for exploitation of resources in outer space and celestial bodies.

Prof. Paul Larsen presented the paper "Current Legal Issues Pertaining to Space Solar Power" (SPS). The author discussed the possibility of placing solar energy collecting satellites in the geostationary orbit, aiming to transmit energy to the Earth, via microwave beams. Prof. Larsen commented on one of the proposals where this type of satellite of extensive mass and area should be constructed on the Moon with lunar resources. Prof. Larsen made reference to the outer space agreements and other international instruments, as well as national laws (USA) to be considered, i.e. launching of SPS, responsibility, liability, property rights, and protection of environment (harmful contamination of outer space and Earth). The author addressed the possible scenarios for the establishment of the enterprise that would undertake the construction and operation of SPS. As a conclusion, Prof. Larsen recommended that the enterprises to undertake the development, construction and operation of SPS shall engage first in legal planning to smoothen the way for the implementation of SPS.

The complexity of launch activities from the sea and the legal technical identification of liable subjects remained a core issue in this session. *Prof. Dr. G. P. Zhukov* in his contribution on the "Liability Problem on Sea Launch Venture Activities" as well underscored that the liability issue in a project like sea launch can be examined from two angles, the liability provisions of Outer Space Treaty and Liability Convention and, on the other hand, the national provisions of the US Commercial Space Launch Act. He further pointed to the different categories of involvement of national states and the legal issues raised by financial investments in this particular project, where the US, Russia, Norway, and the Ukraine are involved by investments of non-governmental

entities, while the U.K. and Liberia have connections of a different category, i.e. the incorporation of the venture and flag of the vessel.

Last presentation of the session was a very instructive intervention by Ms. Masami Onoda on the "Japanese Earth Observation Data Policy", in light of Japan's more recently achieved technological capabilities in earth observation hardware, the increasing internationalization, and the growing private sector. She introduced two main points of the current earth observation policy developed as an internal *modus operandi* by the National Space Development Agency of Japan (NASDA): the observation that the release of data is going to serve exclusively peaceful purposes, and the application of a two-tier pricing policy, enabling distribution for research purposes at the cost of reproduction, but including royalties in consideration of the market price level for data used for commercial purposes. Ms. Onoda clarified in her presentation that this pricing policy would also apply to the non-discriminatory access of a country the territory of which has been sensed. Also the fact of acquisition of data for research purposes had to be substantiated and would be followed up by NASDA, as the use of data for peaceful purposes would as well be scrutinized by the Agency. In her paper Ms. Onoda further gave details on the legal, organisational and technical background of this policy and an outlook on the parameters and basic questions to be solved for a future data policy.

DISCUSSION SESSION

The Chairmen and Rapporteurs of the four sessions first gave a short overview of points raised in the various papers that were interesting for further discussion. The IISL President then reiterated those issues, which included, *inter alia*:

- Implications of territorial integrity and national legislation for space activities
- National versus international legislation (patents, conflicts of law, space station, translating international agreements into national legislation, legal status of space debris, rules of the road for space transportation, proliferation of space activities...)
- Telecommunications, third generation satellites and their implications, are new standards needed?, a role for companies within ITU?, uniform standards GNSS, can high altitude space platforms be considered as space objects?,...
- Privatisation and Commercialisation, property rights in space, when and how?, setbacks of privatisation such as lack of public service, regulation of entrepreneurs, export controls, launching from Australia as an economic alternative, use of the Baikonur launching site and the recent accident leading to a ban,...
- CHM, sovereignty, protection of the moon; establishment of a licencing authority for resource exploitation,

- Special legal protection for the SAHA crater
- Launching from the high seas or from outer space
- Marketing of remote sensing data
- Intellectual property rights
- NASDA's two-tier policy
- Nature of international cooperation, organizations
- Solar power satellites.

Subsequently, an open discussion focussed mostly on the question of property rights in space and on a few other matters. The remarks have been grouped per topic. The following notes give a general indication of the discussions but do not claim to represent official views by any of the participants in the discussion. The author apologises if any remarks have not been properly recorded.

PROPERTY RIGHTS IN SPACE

Dr. von der Dunk started off the discussion session on the topic of property rights in space, which had been raised by various authors. He distinguished between three different "properties"; first, in the case of property on your possessions such as a camera, ownership is not affected by their presence in space. Second, real property, the problem is that there are no sovereign territorial rights in space, therefore in his view such property can not exist in space without further ado. Thirdly, intellectual property, this is in most cases limited to a certain territoriality, therefore also difficult to maintain in outer space. *Dr. Doyle* proposed to add a fourth category, i.e. movable property created in outer space with materials from space. You would have similar rights as on earth on movable property. Since "use" of outer space is free, you may move materials and use them for gain. An engineer worried whether such movable property would be considered as the "Common Heritage of Mankind", and whether he would really have true ownership.

Dr. Jasentuliyana noted that for instance in the field of telecommunications, you need a licence to carry out activities. Once you have that, you may gain profit with your activity. As for the CHM concept, nothing in the Moon Agreement says that you can not make use of your property, it only says then when it becomes feasible to exploit the moon, a regime shall be established (article 11), and such a regime should take into account both the interests of the countries who made the investments, and the countries who do not have the resources to go into space. Under the law of the sea convention, there is also a licensing authority and that works quite well. *Dr Doyle* was of the opinion that the CHM is an ideological and philosophical principle, and not a legal principle. The Moon agreement has received only 9 ratifications in twenty years, so it rather proves the NON-applicability of the CHM principle! In any case, it is not a principle of international law and still subject to much debate. *Dr Jasentuliyana* disagreed that the non-ratification of the agreement proves the non-applicability of the CHM concept. The USA did not ratify the Law of the Sea

convention until a few years ago, and the moon agreement may well come into effect for the US one day as well.

Prof. Lyall proposed that someone should write a paper for the Rio colloquium on the question whether something new you make in space with space materials becomes your property. *Prof. Andem* reminded that we should not do in space what we did on earth, law brings harmony and we must remember that we all need each other. *Dr. Jakhu* supported *Prof. Lyall's* ideas as presented in his paper. We live under the rule of law, privatisation is the current trend, and this must be encouraged but it also needs to be regulated, in order to smoothen the process. Obviously, private companies want to make a profit, but the public interest may be at risk if there is no regulation. You need regulation to allow competition, and to protect the public interest. We have to look at the global level and not just the national level.

Dr. Tennen reacted to what *Dr. White* had said in his paper, *i.e.* that Article II of the OST had resulted from a "secret meeting", because no agreement could be reached on the question of private property rights. He had contended that Article 2 leaves room for private appropriation, as only national appropriation is prohibited. *Dr. Tennen* strongly disagreed with that contention, as merely the fact that national appropriation is forbidden does not imply that private appropriation is allowed! A state cannot authorize its citizen to do what it may not do itself! As regards the historical background of the principle of non-appropriation *Dr. Tennen* also made reference to the earlier UNGA Resolution of 1962, which in its third principle has the same wording as Art. II Outer Space Treaty and which also did not differentiate between 'public' or 'private' national appropriation. *Mr. White* replied by stressing that there had been strong disagreement between the US and the USSR on the question of private property rights, and that several organisations wanted private appropriation included in the article. States may delegate authority to their citizens, and his proposal was not to grant them rights they do not have. His proposal stays within the limits of the OST. States would delegate rights to the private sector without affecting their responsibility.

Mr. Mayer said he bought a piece of the moon and asked if he could sell it. *Dr. von der Dunk* replied that he could do whatever he wants, but someone else could sell exactly that same piece to another person and you could not do anything to prevent that. *Dr. Gál* reminded of the "*nemo plus*" rule, *i.e.* you can never sell what you do not have first. *Mr. Jasentuliyana* agreed that enforcement is the issue here. *Dr. Doyle* stated it was simply fraud, and against US federal law, to sell a piece of the moon. *Mr. Mayer* should see a lawyer and get recovery. *Dr. von der Dunk* then made clear that his previous remark was only the superficial answer; he summarised the relevant parts of his paper for IISL-Torino on *Mr. Hope*, *Mr. Jürgens* and the ownership of the moon, adding ref. to the Lunar Embassy-website which is now 'selling' plots of the moon, and concluding that the US were very probably internationally at fault in letting Lunar Embassy going

ahead, since allowing a US entity operating from US soil to sell privately parts of the moon for US dollars and under US jurisdiction amounted to a de facto exercise of US jurisdiction over the moon which was contrary to the non-national-appropriation principle of Art. II OST.

Dr Jakhu said that the discussions on national appropriation took place at a time when there were not yet any private activities, so we should not try to read into that article what simply is not there. Private companies only became active at a later stage. We should not confuse what the law is and what the law perhaps should be. *Mr. White* noted that although local judges are required to adhere to treaty law, they are not always aware of the space treaties, and thus the person selling pieces of the moon may have acted in good faith selling his part of the moon, when a lawyer had earlier registered his deed (thus ignoring treaty law). It is therefore important to bring space law to the attention of local judges. *Ms. Sterns* said that actually no judge had been involved in this particular case, the "property" had simply been recorded with a county recorder and the sale was fraudulent.

In concluding this debate, *Mr. Jasentuliyana* briefly reviewed the historical means by which sovereignty over property is established and noted that the traditional means have not been exercised concerning the moon or other celestial bodies, and the OST forbids that any sovereignty can be exercised. Absent sovereignty, the alleged "owner" would have no rights to convey in the unoccupied moon property case. *Mrs. Hofmann-Hoskova* asked when property rights would cease in case a space facility is abandoned. *Mr. White* proposed two alternatives: unilateral declaration of expiration of ownership by the respective State, or a fixed expiration term after a space facility has been abandoned.

LEGAL STATUS OF STRATOSPHERIC OBJECTS

Dr. Perek recalled the proposal made in session 2 that stratospheric object be called space objects, even though they operate at only 20 km altitude. He disagreed, as this would lead to confusion, and he hoped that this would not be discussed for the next twenty years, as was the case with the question of delimitation of outer space. In his view, a space object is an object in outer space, and a stratospheric object is an object in the stratosphere. *Dr Gál* reminded that even without delimitation, the functional theory had worked very well in practice. Since the stratospheric object is not in an orbit, it is not a space object. Otherwise, Concorde could also fall within the definition of a space object; however it is not a space object because it is not orbiting; this is the functional theory.

STATUS OF PRIVATE COMPANIES IN ITU

Dr. Jakhu disagreed with the proposal that had been made by *Mr. R. Moore*, to allow private companies to be autonomous actors within ITU, because it is not feasible; there can be no rights for private companies at a global level, we are not yet ready for that. But if it does happen sometime, there will be a need for a regulatory body.

LIABILITY FOR SPACE TRANSPORTATION

Dr. Gaubatz raised the issue of liability for the operation of space transportation systems; of course the public was not involved until now, so this has not been an issue, but when the general public gets access to outer space transportation, this needs to be addressed. An IISL working group may be the right forum to do that. (*Dr. von der Dunk* again brought up this proposal at the General Assembly, which *Mr. Gaubatz*, not being an IISL member, did not attend. The IISL Board requested him to submit a specific proposal to the next Board meeting.)

Dr. Jasentuliyana concluded that apparently there is a lot of business for the IISL and that lawyers will have a busy agenda solving all these questions, after which he had to close the discussion for lack of time.

Hereafter, the 42nd Colloquium was closed and the President thanked all those who contributed to it and invited all to the 43rd Colloquium in Rio de Janeiro, Brazil.**

Tanja Masson-Zwaan (Editor)**
(IISL Secretary/ Colloquium Coordinator)

* 2-6 October 2000. Information about the Colloquium, session topics and procedure for the submission of abstracts, as well as the Manfred Lachs Space Law Moot Court Competition may be obtained from the IISL Secretary via e-mail (jtmasson@cyberway.com.sg) or from the IAF Website (<http://www.IAFASTRO.COM>).

** With many thanks to the Session Rapporteurs: *Olivier Ribbelink* (The Netherlands, for session 1), *JoAnn Clayton-Townsend* (USA), for session 2), *Harry Tuinder* (The Netherlands, for session 3), *Martha Mejía-Kaiser* (Mexico) and *Suzanne Reif* (Germany) for session 4.

COMMENTS

COMMERCIAL SPACE DEVELOPMENT IN MILLENNIUM 2000

Amb. (Dr.) Edward R. Finch, Esq.*

In this last decade of the 20th Century, there has been considerable commercial development of outer space. In Millennium 2000 we will see rapid commercialization under required Government controls continued by U.S. non-governmental organizations, international organizations, national corporate organizations, multi-national corporations, non-profit and private corporate organizations, and universities.

Telecommunications and remote sensing represent mature markets of outer space. Space tourism represents more speculative opportunity but private/public space development is accelerating rapidly. Proof of this can be seen in the annual published report of the U.S. Department of Commerce on the State of the Space Industry. Also the Vienna Declaration, as well as the AIAA report and the Final Report of the IISL Workshop on Space Law in the 21st Century, both issued at the conclusion of UNISPACE III, show the slow trend to permanent, large space commercialization. The U.S. Congress and NASA are pressing the trend to transition space operations from government to private commercialization, so governments can concentrate on space research and development and space activities for peaceful purposes. Commercial space utilization by governments for reduced costs for research and military uses is here. The 1967 Outer Space Principles Treaty is an essential key to world peace forever in outer space, as it has been in the last 40 years. World trade and national security for all are in outer space. The Internet has clearly shown this from its acceleration in 1999. The International Space Station and new products commercialization lead to increasing outer space commercial activities opening the opportunity for lunar development early in Millennium 2000.

Now, in 1999, we see rapid commercial space development, especially in Low Earth Orbit (LEO) and Geostationary Orbit (GEO), of over 1,000 new satellites, national, multi-national and private, for research, communications, security, environment and disaster monitoring. Some are international corporations, primarily interested in profitable commercial outer space development. The launching government as required has primary legal responsibility. The U.S. has encouraged this commercial

* U.S. Delegate to 1999 UNISPACE III, Vienna, Austria. Former U.S. Special Ambassador. National Space Society Representative to United Nations. Member: AIAA, IAF, IAA, IISL, ABA, and NYSB. The views, opinions, and predictions herein are those of the author, and are not to be attributed to any corporation, government, or non-governmental organization.

development as have the UN, UNISPACE II (1982) and III (1999). The U.S. Congress space commercialization recognition came loud and clear, when it passed the *Commercial Space Act of 1998*. NASA has been vigorously implementing it in 1999. The commencement of International Space Station's (ISS) slower than schedule actual construction progress in 1999 has also given considerable impetus to commercial space development.

Robert McCall, distinguished international space artist, showed slides at UNISPACE III of future lunar and space construction at the Special Functions Room for the National Space Society's 25th Anniversary Reception on July 20, 1999 at UNISPACE III, in Vienna, Austria. The National Space Society concluded that these current changes, in the way the ISS experiments were and are NASA selected and operated, will in mid-2000 millennium point the way to permanent lunar industrial colonies for lunar research and experimental manufacturing on the Moon, using lunar microgravity and other resources. Possibly portions of "captured" asteroids brought to the Moon will be lunar experimental valuable materials. Opening the Moon, and later Mars and then the universe is *the* frontier of the Millennium 2000. The National Space Society urged publicly and later also successfully the U.S. Congress to set aside a portion of the U.S. share of the International Space Station facilities for research for commercial uses.

NASA, International Space Station (ISS) and Commercial Space

The U.S. National Aeronautics and Space Administration, principal sponsor of the ISS, has adopted clear guidelines for commercial space development. Currently, NASA has two methods for choosing early ISS users. The first is a peer review system currently under consideration to run 186 commercial operations. Experiments are chosen for ISS space research on ground test, scientific soundness, feasibility and readiness for flight. The second method for commercial selection for the ISS has been government proposals, industrial corporations proposals, and those from new NASA-designated commercial space centers. NASA judges proposals based on the relative contribution and plans of the industrial partners and the knowledge gained from prior flight experimentation.¹ Commercial development of space has also been considerably advanced by both the U.S. and Japan, because of their resurgent interest in pollution-free energy from outer space. It could vastly preserve Earth resources, cut pollution of Earth and space, and help protect the Earth environment. The electronic mass-driver is also again strongly recommended as ideal for Moon resources for commercial development, and later for construction of other orbiting space stations.

1 See ISS Research Plan #NIP 1998-02-232-HQ.

NASA Administrator Daniel Goldin recently stated "If a company wants to take on financial risk and amortize the operating cost of the International Space Station (ISS) across NASA and other customer bases where we're less than half, that I would consider commercialization and we'd be thrilled to do that." While Daniel Goldin has pledged to set aside part of the International Space Station for private business ventures, so far he has not seen a proposal that he would consider truly commercial. Thus NASA is still mainly responsible for financing ISS construction as a commitment that puts great pressure on NASA's annual budget from the U.S. Congress.

The five advanced Discovery Programs of NASA have been successful, including the outstanding Lunar Prospector. Lunar Prospector and NASA-DOD mosaic maps from Clementine show possible lunar ice spots. These furnish proof of possible water-ice on the Moon. This would clearly make possible the development of permanent lunar research and processing installations on the Moon, particularly for astronomical deep space research. Since there appears to be life supporting H₂O sources on the Moon and there is no cloud cover, or man-created distortion, permanent manned astronomical laboratories might find an excellent new home. There is available on the Moon an unlimited sun source for solar electric power generation; so there is also soon extractable Helium 3, oxygen, hydrogen, and lunar exportable minerals for transport to Earth, and Earth sales, or for use in space. This makes permanent Moon laboratories and processing facilities, on a constantly improving technology basis, most attractive.

The ISS Leads to Moon Commercialization

In July, 1999 there were considerable discussions at UNISPACE III in Vienna, Austria, about the Moon for future Lunar commercial space developments. Perhaps one or two *national* funded manned deep space international astronomical telescopes or microgravity research laboratories for pharmaceuticals will come first, with habitats. Further, why not a Hubble III there? This is not yet planned by NASA. U.S. Congress should fund it, now. Currently NASA does not yet have plans for *exploiting* the resources of the Moon. Government and private research and development, with related commercial space manufacturing is not exploiting! Several nations over many years have carefully examined the Moon and lunar soil samples. I doubt that further *environmental*, and surface *study* appears to be necessary now, pending much needed permanent laboratory on-site lunar research, with planned commercialization therefrom. That is a vital next step. Contamination care is necessary, for both forward and back contamination. Bulldozing the lunar surface material (called regolith) off the buried ice and distilling it into usable water does require Moon manned labor but does not require even trained experienced payload specialists. Service employees and lunar

scientists living quarters are important for essential final research, use, exploration, and later fair use exploitation of Moon surface and subsurface minerals.

In the coming Millennium beyond year 2000, we will see lunar international "hotels", constructed mostly subsurface for radiation protection and for *lunar storm safety* as permanent lunar residential housing for researchers and employees. Industry or NASA can build and later lease or rent these back to commercial operators for scientists, workers, and visitors as lunar residential housing.

A multi-national consortium of industries, with minority NASA investment and cooperation for use by all initial lunar personnel, should early in the new Millennium build a Moon water plant facility, oxygen facility, and a helium extraction facility. Perhaps a lunar mass-driver should be early constructed for habitat and new lunar space construction, and later for further space station construction. A test prototype should now be built on Earth by NASA. The water plant, extraction facilities and mass-driver, are clearly needed on the Moon early on.

Commercial users of the ISS space station research resources might receive from NASA, or a NASA selected independent business management company, a "price sheet" based on market-like mechanisms for commercial test experiments during the early missions. ISS type laboratory power, professional support, and service support is required for the Moon, and will be for a commercial lunar colony.

Full or partial microgravity space research and manufacture processing will move forward in the Moon laboratories with startling scientific rapid evolution. Science does not stand still. To insure sciences continued amazing space progress requires support of *all* nations for better, faster, cheaper and earlier lunar space commercial results.

The National Space Society 1998 meeting at a special lunar treaty review meeting of many scientists and lawyers in Washington, D.C., also came to the conclusion that major space faring nations with their government funded research, design, and integration of lunar experiments, will precede to do joint research projects with commercial developers. Lunar facilities, including reasonable areas nationally registered and UN registered by the launching state, and licensed for research and processing are a present, voluntary, wise legal step. Nations or industries which *can and will do it now, and pay for it, must now be encouraged to go forward by all*, or it may never be done, which will result in the detriment of all!

U.S. industry and corporations should now be reassured that the current international and U.S. legal environment does not prohibit their going forward vigorously with NASA as a minority participant with them for research and development funding for lunar research and later manufacturing plans for the *commercial* use of the ISS, and the Moon, early in Millennium 2000.

Space Science and Manufacturing

The Space Studies Institute of Princeton University, of which the writer is a Fellow, has for many years conducted annual space manufacturing engineering and other space studies, seminars, and research for space stations, space objects, and lunar resource commercial utilization. All of this research is in the public domain in annual published documents. These are available as the scientific background for new ISS, lunar, and other outer space commercial use plans.

A future step, during the new millennium, will be to develop specific lunar outer space site processing locations by bilateral and multilateral agreements for industry's safe use of legally Earth protected trade secret proprietary data, and experimental equipment, on the Moon. Patents are now legally protected worldwide when properly registered, and should be so protected for use in outer space. Patent laws' international application is now very broad. For U.S. origin, space intellectual property and trade secrets can and should be protected in outer space use, as world registered patents and trade secrets are now protected worldwide on Earth.

It may be that the next step would be to develop a new multinational agreement by NASA with international coordination, perhaps along the lines of the present Antarctic documents to take care of the future allocation of reasonable, usable, defined, and protected proprietary space areas for lunar research facilities. Later in the new Millennium, national governments with commercial cooperation may be ready, able, and programmed for further space stations at L-4 & L-5 and elsewhere. Antarctica is an excellent example for advance lunar agreed, allocated, and protected research areas for lunar project use with international coordination.

Creation of a new NASA delineated and selected lunar base science research area should be first NASA-U.S., "registered", delineated, and U.S. supervised, as required. That will be the next first step for actual commercial space development for the permanent lunar space research settlement. That is for the benefit of developing countries as much as for developed countries. Perhaps it will, and there should be bilateral or multi-national space agreements with governments and industry as now in the international NASA agreements for ISS. Daniel Tam a former NASA International Space Station deputy project manager and aerospace executive, has been special assistant to NASA's Administrator Daniel S. Goldin, since February, 1999. He will specifically encourage private enterprises to take a stronger financial interest in *space* operations. Also this will keep NASA out of routine space operations as much as possible and push NASA resources into *new* science and *new* technology development. This will promote, internationally, lunar *commercial* research and development sooner. NASA has also employed Dr. Baruch S. Blumberg, a 1976 Noble Prize Winner, as its first Director of a new

Institute to seek new approaches to the universe, and to define and study life beyond Earth. The successful NASA Deep Space I operation should continue beyond September, 1999. The Institute is "without walls" and will work with major U.S. universities and international sources with a \$10 million budget. *Someone has to start with today's resources to do so. Without that, both developed and especially developing countries are big losers!* Creation of space colonies (including but not limited to lunar colonies) remains a stated mission purpose of the National Space Society since its inception over 25 years ago. U.S. Supreme Court Justice Rehnquist has publicly spoken of a possible government structure for such a space colony in the long-term future. Reality will do it in the new Millennium. ISS and NASA provide a strong start, and show good practical examples.

The 1967 Outer Space Principles Treaty and Commercial Space Peace

Lunar commercial users should be invited by their national governments² to utilize resources on an actual full cost and lunar space-available basis. These same considerations (as for ISS) should and could be applied to the first lunar colonies, but without any proposed 1979 Moon Treaty "international regime" that has already raised so many international legal and technical problems. These are unnecessary, and can only delay commercialization and the opening of the Moon and the universe for all nations and all mankind. No "international regime" is needed.

The legal questions of the protection of industry, intellectual property and industry proprietary data, at ISS (and later in lunar colonies) are governed by the existing outer space treaties, and multi-national or bi-lateral agreements. Currently there is absolutely no objection to utilizing space resources for research processing and for manufacturing experimental processing, always including some research for improving lunar space processing and lunar space manufacturing.

Prof. Carl Q. Christol, in his article on the "Moon Treaty and the Allocation of Resources", states

With respect to Moon resources, however, there are exceptions. Under the terms of Article 11 (3) of the (1979) Moon Agreement, parties engaged in the exploration, use and exploitation of the resources on or below the Moon's surface are allowed to exercise property rights over items

² With notice and permission as provided by the "Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space including The Moon and other Celestial Bodies, January 27, 1967 18 U.S.T. 2410 and 510 U.N.T.S. 205," hereinafter the 1967 Outer Space Principles Treaty.

removed from their 'in place' position. Additionally, pursuant to Article 6, a party can remove from the Moon samples of its minerals and other substances, and pursuant to Article 8, it may engage in activities 'anywhere on or below' the surface of the Moon. Further, while Article 11 (3) prohibits a party from exercising property rights, over any part of the surface or the subsurface of the Moon, or over natural resources in place, accepted practice has established that when any such object is removed from its 'in place' conditions, the removing State, if a party to the Agreement, may accord property rights to these objects.³

A detailed article by Dr. Stephen E. Doyle on "Using Extraterrestrial Resources Under the Moon Treaty of 1979" is published in a recent issue of the JOURNAL OF SPACE LAW.⁴

France, which has signed but *not ratified* the 1979 Moon Treaty, still does not have these resource problems! Only the 9 non-major space powers that have both signed and ratified may later have these lunar problems for lunar property.

Space research, science and technology for the Millennium 2000 to 3000 will continue to advance rapidly, assuming we can continue to maintain outer space as a peaceful safe environment. There have been considerable professional and diplomatic meetings and discussions about the effect of the 1979 Moon Treaty with its "common heritage of mankind" words, and prospective unpopular "international regime."⁵ The U.S. is not a signatory and will not be a party to this widely rejected 1979 Moon Treaty.

When the tremendous microgravity and other benefits of space manufacturing are more evident, private industry, with minority NASA funding, will be investing not millions, but billions, of their own monies in further International Space Stations (perhaps at L-4 & L-5) and in Lunar Stations. There will be, as legally required, full U.S. Government approval and NASA technical coordination. Each participating nation, governments, and commercial investors will take part on a case by case basis, and even private investors and stockholders will be protected. How? The answer is by private and public international law. The widely rejected 1979 Moon Treaty with its proposed future "international regime" has only 9 ratifications to date. *None* of the major space powers is among them. Even without further active commercial space development, the *developing* countries may quickly see "*common heritage*" and "*international regime*" of the 1979 Treaty as real detriments to them. Two 1979 Moon Treaty

3 See 22 (2) ANNALS AIR & SPACE L. 31-47 (1997).

4 See 26 J. SPACE L. 111 (1998).

5 See Dr. Carl Q. Christol's detailed documented paper "*The 1979 Moon Agreement: Where is it Today*", 27 J. SPACE L. 1 (1999).

signatory nations may even now want to withdraw from this 1979 Treaty. Without *commercial* space lunar development now by developed countries, the developing countries will soon realize this detriment by force of economics. The chance of any kind of an "international organization" under the 1979 Moon Treaty is very small, if not non-existent.

As Dr. Eilene Galloway points out in her distinguished statements the 1979 Moon Treaty was opened for signature December 18, 1979. The U.S. has not signed the 1979 Moon Treaty, so it can be regarded for the U.S. and all major space capable nations, including France, at present as simply an "in the closet" inactive treaty issue. The 1979 Moon Treaty has not entered into existence *except for the 9 nations that have both signed and ratified it*. As Harrison H. Schmidt also points out even for signatory-only nations it is inaccurate to assume that the 1979 Moon Treaty presents to developing nations an expanded nonsovereign claim as to lunar resources by adding the words 'by means of use or occupation or by any other means.' These words are also in the 1967 Outer Space Treaty which was signed and ratified by the U.S., and by some 93 nations. These words merely repeat in the 1979 Moon Treaty the words of the 1967 Outer Space Principles Treaty '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.'⁶ The following of international law, as NASA has done for the ISS, is an example for lunar colonies and other colonies in outer space in the next Millennium.

The 1967 Outer Space Principles Treaty provides the sound legal basis for a continued peaceful use of outer space for the next millennium. With the 1967 Treaty backed by every nation's own self-interests we have had over 40 years of the *peaceful* uses of outer space. The 1967 Outer Space Principles Treaty was formulated by the United Nations Committee On the Peaceful Uses of Outer Space. It importantly prohibits the orbiting of weapons of mass destruction, and also prohibits any ownership and appropriation of real property in space. It sets forth some basic guidelines for lunar use and for the environment of outer space. Ownership of space property and research sites is not necessary, as utilization is provided by the 1967 Treaty for the new Millennium's commercial development of outer space. Rights of utilization are provided therein for research and processing with advancing technology. That is all that is necessary. This farsighted 1967 Treaty does not legally need to be amended for space research and manufacturing. It is legal and practical now to go freely forward anywhere in outer space - by national and licensed lunar bases, by ISS - or elsewhere in outer space, in the future.

⁶ See Eilene Galloway, *Status of the Moon Treaty*, Space News, August 3-9, 1998, pp. 21-22. See also Harrison H. Schmidt, *The Moon Treaty: Not a Wise Idea*, *id.*, July 13-19, 1998, p. 28.

With regard to the 1967 Outer Space Principles Treaty, it should be noted in Article VI that it provides:

State Parties [to the 1967 Treaty] shall bear international responsibility for national activities in outer space, including the Moon and other celestial bodies whether such activities are carried on by governmental agencies or by non-governmental entities and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty. The activities of non-governmental entities in outer space including the Moon and other Celestial Bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty. When activities are carried on in outer space, including the Moon and other celestial bodies, by an international organization responsibility for compliance with this [1967] Treaty shall be borne both by the international organization and by the States Parties to the Treaty participating in such organization.

The 1967 Outer Space Treaty has become the supreme law of the land, as provided by the U.S. Constitution.

Conclusion

The guidelines for a lunar research area agreement are also shown in a U.N. General Assembly Resolution dated December 13, 1993 which provides that

States are free to determine all aspects of their position 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 interest of the parties concerned as for example with intellectual property rights.

In conclusion, space commercialization development of the Moon, the asteroids, and Mars, with outer space peace, will become reality in the new Millennium years from 2000 to 3000. Developing countries must help developed countries of Earth to do this for their own material benefit; or no one will ever do it, as we have seen in the last decade of this Millennium. Outer Space must remain peaceful in the new Millennium for all users, as the 1967 Space Treaty provides and as the U.N. has actively and successfully advanced it for many years, particularly by COPUOS. A new

treaty with COPUOS and technical help by the Inter-Agency Debris Committee before 2010 on space debris may be necessary for safe space traffic transit; also, new multilateral NASA-type multilateral agreements for commercialization of the Moon, before 2010, are clearly desirable in the new Millennium. Perhaps, by research use on the Moon of a very valuable asteroid or a piece thereof will be possible, later in the new Millennium.

I predict robotics and human explorations of Mars in mid Millennium will follow the successful lunar laboratories and lunar settlements, with joint international Mars research funding from major space powers. The lunar research manufacturing and settlements will set the pattern. I also predict the Earth will not collide with an asteroid, or a comet, or change radically its position in the universe during the new Millennium. Space commercialization for space research and space manufacturing and development and even space tourism will become a reality by end of the new Millennium. *Ad Astra in pace.*

**THIRD UNITED NATIONS CONFERENCE ON THE EXPLORATION
AND
PEACEFUL USES OF OUTER SPACE (UNISPACE III)
Vienna, 30 July 1999**

**Closing Statement
(Excerpts)**

N. Jasentuliyana
Executive Secretary
UNISPACE III Conference

...As we come to the end of this last global conference of the century held by the United Nations, in this historic and culturally rich city of Vienna, let us hope that we have made a difference even in a small way to the life on our planet.

Why is UNISPACE III being held at this critical juncture in human history? Not only are we at the threshold of a new millennium, but we also seem to be on the verge of a new era for humanity. The world has moved, slowly but inexorably, over the last decade, from confrontation to cooperation. The new geo-political context, following the end of the Cold War years, rapid advances in space technology, emerging globalization of economic activity and the trend towards commercial exploitation of space technology and applications: all these made it imperative to take a fresh look at the whole gamut of space activities at both the intergovernmental and technical levels. As a result, what began in 1992 as a proposal made by

one delegate for an international conference was mandated in 1997 by the United Nations General Assembly and has culminated in the organization of UNISPACE III.

UNISPACE III has been attended by over 2,000 participants, constituting the delegations, experts in the technical Forum, young professionals in the Space Generation forum, and exhibitors. the Conference addressed key agenda items leading to the adoption of the Vienna Declaration today...UNISPACE III has been unique in addressing --- both technical and policy level issues of relevance to the individual delegations, in particular, and to society as a whole....

UNISPACE III has been unique and innovative in many ways. Like many other United Nations conferences, it brought together a number of professionals from government and intergovernmental agencies; but unlike others, it also assembled representatives of NGOs, academia and industry as equal partners with Governments. Even more interesting and satisfying, through the Space Generation Forum, it also had participation from an active and involved group of young professionals and students,...

The report of this Conference, along with "The Space Millennium: Vienna Declaration on Space and Human Development" which has just been adopted, is itself a magnificent achievement. This **report** is not only a product of cooperation among **all** Member States interested in space activities, but also a product of collective wisdom and will of all members of the global society who believe in the benefits of space science and technology....we demonstrated here that indeed under the umbrella of the United Nations all official and non-official sectors of the international community can work effectively dealing with the business of the peoples' of the world....

...All of you will agree with me that UNISPACE III has achieved the aim and goals that all of us set out for it. The intense discussions and deliberations that all of you had over the past 10 days has seen the culmination of programmes and activities for promoting the effective means of using space solutions to address problems of regional or global significance; strengthening the capabilities of Member States, especially developing nations, to use the results of space research for economic and cultural development and enhance international cooperation in space science and technology and its applications. The Conference has addressed specific issues of developing country opportunities and expanding the scope of utilizing space for a sustainable development. At this Conference, we have also discussed the status of space science and technology and their applications: what is available and what are their practical benefits; why we need to pursue advances in space; what the social and economic impacts of space science are; what we need to benefit in space science and technology; how space activities stimulate the economy; what is good about space commercialization; what we need to make international space law stimulate space activities; how we promote international cooperation; what

the United Nations system does and what the United Nations needs to do more in space activities.

...Space has been a powerful tool and Space will continue to enable society to achieve higher goals in the new millennium, as has been envisioned in the Vienna Declaration. Space technology, with its already proven ability to transform the life-style on this planet, by providing food and economic security through sustainable integrated development; communications for everyone and the realization of the "global village"; optimal management of natural resources; support to disaster management and environmental monitoring and provision of navigation, education and health services holds the best promise for improving the quality of life of even remote rural population in the least developed countries on earth....

...With the cooperation of the Member States, the United Nations will endeavor to undertake the implementation of the Vienna Declaration, which will help to reduce --and even eliminate, over time --- the gross inequalities within and between nations....

...The deliberations and the results of UNISPACE III, if effectively implemented, will have a lasting impact on the lives of millions and their ability to benefit and improve their qualities of life. The specific plans of action where space science and technology can serve as tools for local, regional and global developmental activities have been identified and it will be a reference blue-print of action for the coming years for each Member State and the United Nations to follow. Crucial amongst the many recommendations in the Vienna Declaration are:

- creating and implementing an integrated, global, space-based, natural disaster management system and also the development and implementation of the Integrated Global Observing Strategy that would facilitate access to and the use of Earth observation data;
- improving public health services through telemedicine services; promoting literacy and enhance rural education using satellite-related infrastructures; devising efficient policies, infrastructures, standards and applications development projects;
- improving the efficiency and security of transport, search and rescue, geodesy and other activities through space-based navigation and positioning systems;
- improving scientific knowledge of near and outer space by promoting cooperative activities in such areas as astronomy, space biology and medicine, space physics, the study of near-Earth objects and planetary exploration;
- increasing awareness among decision makers and the general public of the importance of peaceful space activities for improving the common economic and social welfare of humanity;
- encouraging all Member States and international organizations to further strengthen their efforts in promoting the peaceful uses of outer space for the benefit and in the interest of all States.

... Space technology could well provide developing countries with the extraordinary opportunity of "leap frogging" over certain stages of development process and thereby quickly providing their people with the physical infrastructure and intellectual capital that is par with the best anywhere....

The ultimate ideal of space activity, indeed of all development, must be - as Mahatma Gandhi said - to "wipe every tear from every eye".

CASE DEVELOPMENTS

The unprecedented lawsuit filed by space insurance underwriters in July 1997 in Los Angeles District Court - seeking compensatory damages with interest and court costs for a claim they paid in July 1996 to cover the damage under a policy with **American Mobile Satellite Co.** and also alleging misrepresentation of satellite test results by the Toronto-based **Spar Aerospace Ltd.** - ended in a mediated settlement.

In **Space Imaging Europe, Ltd. v. Space Imaging L.P.**, 38 F. Supp. 2d 326 (S.D.N.Y. 1999) the Court held that the right of first refusal provision in contract for satellite image data sales was not binding as written.

A criminal case involving a drug offense (**United States v. Eberle**, 993 F. Supp. 794 (D. Mont. 1998)) held, in part, that defendant's Fourth Amendment rights were not violated by placement of GPS/electronic tracking device on his truck.

In **Pfund v. United States**, 40 Fed. Cl. 313 (1998), the patent holder's claims against the U.S. Government were held invalid as obvious. The date on conception for the invention was in 1962 but Pfund was not issued a patent until 1981 because, in part, it involved a high level of secrecy.

In **Hughes Aircraft v. United States**, 140 F. 3d 1470 (Fed. Cir. 1998) rehearing en banc denied 148 F.3d 1348 (Fed.Cir. 1998), cert. denied 119 S.Ct. 1112, 143 L. Ed. 2d 108 (1999).

The Court granted \$4.125 federal award in **Margate Shipping Co. v. United States**, 143 F.3d 976 (5th Cir. 1998), to plaintiff who salvaged a barge carrying a space shuttle fuel tank.

On appeal In re **Rouffet**, 149 F. 3d 1350 (Fed. Cir. 1998) the court held that Rouffet's invention involving a way of reducing the number of handovers between beams transmitted by one satellite was not obvious and thus eligible for patent.

In **Space Systems Loral, Inc. v. Lockheed Martin Corp.** 1998 WL 1045303 (N.D.Cal.)(Dec.21,1998) the Court granted defendant's motion for partial summary judgment that its A 2100 Series satellites do not infringe the Rahn 0.84 patent. In an earlier decision, **Transpace Carriers, Inc. v. United States**, 22 Cl. Ct. 80 (1990), the Court dismissed TCI's complaint because it failed to exhaust its remedies under

the disputes clause of the Preliminary Agreement setting forth the terms by which TCI could qualify to run NASA's Delta launch vehicle program for one year. After negotiating for two years, NASA did not award the contract to TCI and TCI refiled its complaint in 27 Fed. Cl. 269 (1992) seeking direct damages and lost profits. The Court found that material issues of fact existed with respect to NASA's duty to deal fairly and in good faith. The Court also found that the agreement did not cover lost profits and that TCI was precluded by contract from suing on a takings theory.

In Hawai'i County **Green Party v. Clinton**, 980 F. Supp. 1160 (D. Haw. 1997), plaintiffs sought but were not awarded preliminary injunction to stop the launch of NASA's **Cassini** spacecraft which carried plutonium in its payload. The Court held that NASA had examined the environmental consequences and alternatives to the launch and had not violated the National Environmental Policy Act.

SHORT ACCOUNTS

The Council of Advanced International Studies is organizing an International Colloquium on Air Navigation Security and Space Contamination April 26-28, 2000 at the Cordoba House of Culture Foundation, Av. Vélez Sarsfield 3656 (CP 5016) in Córdoba Argentina,

The space segment will deal with NPS principles, telecommunications interference by space contamination, space debris and issues of "non-ruled responsibilities."*

Ambassador Aldo Armando Cocca
President

The Eighth ECSL Practitioners Forum was held November 26, 1999 at ESA Headquarters in Paris, France. Topics and their invited discussants included: Update on European Union Satellite Communication Regulation (M. R. Roelandt, Le Gouëff Avocats, Luxembourg); the Privatisation of Eutelsat (M.C. Roisse, Legal Adviser Eutelsat); the Utilisation of the International Space Station (Farand, ESA Legal Affairs Dept.); Global Navigation Satellite Systems: Latest Developments (Ferrazzani, ESA Legal Affairs Dept.); The draft Unidroit Convention on international interests in Mobile equipment (Unidroit representative); Procurement Practices and Procedures in the Space Industry (Duran, Head, ESA Contracts Department; Ellissaldes, Matra Marconi Space; Ersfeld, Legal Adviser, DASA, and Marri Alenia. Prof. K-H. Böckstiegel of Cologne and M.R. Kröner of Rotterdam were invited chairs.

* Papers must be submitted before March 31, 2000. For more information, contact Prof. Dr. Cocca, Lavalle 1527, piso 10, 1048 Buenos Aires, Argentina; Fax: (5411) 4374-0120.

Executive and Legislative Notes

On Oct. 13, 1999 the U.S. Senate by a 48-51 vote rejected the **Comprehensive Test Ban Treaty** which would have extended the ban on atmospheric testing to include underground nuclear tests.

The **1999 Defense Authorization Act** contains significant changes in satellite exports controls (sec. 1511-16), including the assignment of responsibility for satellite export licensing to the Secretary of State (sec. 1514). The Act also authorizes appropriations for the Enhanced Global Positioning program (sec. 218) and the Ballistic Missile Defense program (sec. 231-36).

The **Strom Thurmond National Defense Authorization Act for Fiscal Year 1999**, Pub. L. 105-261, 112 Stat. 1920 (1998) assigns responsibility for satellite export licensing to the Secretary of State (sec. 1514)*, authorizes appropriations for the Enhanced Global Positioning program (sec. 218) and the Ballistic Missile Defense program (sec. 231-6).

The **Next Generation Internet Research Act of 1998**, Pub. L. 105-305, 15 U.S.C. sec. 5513, authorizes research programs related to high-end computing and computation and on computer network infrastructure, high-speed data access, and networking technology.

The proposed **Commercial Space Transportation Cost Reduction Act** (S. 469) provides government loan guarantees to companies building commercial launch vehicles; the **Space Launch Cost Reduction Act of 1998** (S. 2121) would drastically lower launch costs.

The **Iran Nonproliferation Act of 1999** (H.R. 1883) would withhold NASA payments to the Russian Aviation and Space Agency (RAKA) for contributions to the international space station until the U.S. President certifies that RAKA is not helping Iran's missile program.

The proposed **Commercial Space Transportation Competitiveness Act of 1999**, H.R. 1526, 106th Cong. (1999) purports to promote the international competitiveness of the United States commercial space industry, to ensure access to space for the Federal Government and the private sector, and to minimize the opportunities for the transfer to other nations of critical satellite technologies. A similarly entitled legislation, **H.R. 2607** aims to promote the development of the commercial space transportation industry, to authorize appropriations for the Office of the Associate Administrator for Commercial Space Transportation, to authorize appropriations for the Office of Space Commercialization, and limits the private sector's liability by extending commercial space launch and re-entry insurance indemnification by five years. This bill was approved Oct. 4 by the U.S. House.

* See Pamela L. Meredith and Sean P. Fleming, *U.S. Space Technology Exports: The Current Political Climate*, 27 J. SPACE L. 33, at 39 (1999).

The Commercial Space Transportation Licensing Regulations (notice of proposed rulemaking), 64 Fed. Reg. 19, 626 (1999) (to be codified at 14 C.F.R. pts. 400, 401, 404, 405, 406, 415, 431, 433, 435) amends former transportation licensing regulations, whereas another notice of proposed rulemaking deals with the **Licensing and Safety Requirements for Operation of Launch Site** (64 Fed. Reg. 34,3216 (1999) (to be codified at 14 C.F.R. pts. 417, 420).

Awaiting congressional and presidential action is the **Triana** satellite project which supporters claim would improve our understanding of the Earth's climate system, provide warning in advance of harmful solar events and protect international investments in satellite communications.

This Reusable Launch Vehicle and Reentry Licensing Regulation, 64 Fed. Reg. 19,626 (1999) (to be codified at 14 C.F.R. pt. 401) proposes requirements that will limit risk to the public from RLV and reentry activities.

A bill permitting companies to bypass Comsat in getting satellite services directly from Intelsat and seeking to privatize international satellite communications was recently approved by the House and the Senate passed its version. Conference committee action and presidential approval are to conclude the legislative process.

Notwithstanding Russian objections the United States is considering development of an **anti-ballistic missile defense** system in recognition of perceived threats from North Korea, Iran or Iraq. Because of the inadequacy of the current workings of the technology, the Defense Department proposes that the President delay a decision until next June.

International Developments

On August 27, 1999, two Russian and a French cosmonaut, the last occupants of **Mir**, left the 136-ton spaceship unmanned and in the absence of some unexpected financing a Liquidator crew will be dispatched in early 2000 to bring it down so that it would burn up over the Pacific Ocean. This is a delicate maneuver that could teach valuable lessons decades from now when part or all of the international space station is deorbited. Reportedly, **Mir** circled the Earth more than 77,000 times and survived over 1,600 breakdowns. Russian space officials believe that the chance of **Mir** crashing into a populated area after its deorbit planned for March 2000 is remote.

NASA may ask Russia to delay the launch of the initial three-person crews from the U.S. and Russia which are expected to man the **International Space Station** for an average of four to five months starting in March 2000. Russia's quota of manned missions now stands at 30% but some of it might eventually be sold to the European or Japanese Space Agencies. The quotas of the Japanese and European Space Agencies are 12.8% and 8.3%, respectively.

The **IAF Forum** held at UNISPACE III July 21, 1999 addressed the themes "Leaving Planet Earth" and "Living on Planet Earth."

A Jan. 26, 1999 **U.S.-Russia-Kazakhstan Agreement** deals with Technology Safeguard while a Sept. 29, 1999 **U.S.-Ukraine Agreement** addresses continued cooperation in commercial space launch projects. Another Sept. 29, 1999 agreement entered into by exchange of notes is to govern the export of imaging satellite technology by the U.S. to **Japan**.

Jason-1 a joint NASA/CNES project to provide accurate data on sea surface topography for determining global ocean circulation and its influence on climate is scheduled for launch on May 18, 2000.

Egnos, Europe's contribution to the Global Navigation Satellite System is to enter service in 2003 and **Galileo**, another contemplated European project, could be operational in 2008.

The ITU has been responsible for coordinating satellite location in Earth orbit and allocating the use of particular radio frequencies. However, it has no authority to enforce its recommendations and relies on companies and countries involved to resolve disputes. The ITU's problem is made more difficult because it allocates satellite slots to every country even though many of those countries cannot afford to build and launch satellites. Another impediment is that many countries file for satellites they never build. An amicable solution that may serve as a potential example that companies, like **PanAmSat**, **Intelsat** and **SkyBridge**, confronted with similar problems could follow was the June 1999 agreement in which both **Eutelsat** and **SES** agreed to split the available radio spectrum so neither company will use the exact same frequency. Privatization which **Intelsat** approved by may be conditioned on retention of its current orbital slots.

In July 1999 ITU released the report of its Eighth Regulatory Colloquium which is designed to assist telecommunications regulators and policy-makers, particularly in developing countries, in dealing with the many critical issues arising out of contracts, e-commerce, intellectual property rights, taxation, and dispute resolution.

On Sept. 21, 1999 **Spot Image** of France and **Orbital Imaging Corp.** of the United States agreed to jointly market Orbital's two high-resolution (1 meter) satellites, **OrbView 3** and **OrbView 4** in Europe and extend Spot's medium-resolution (2.5 meter) satellite sales in the United States. In competition with the **OrbView** satellites is the **Ikonos** satellite, built by Lockheed Martin and owned by Space Imaging Corp. which furnished in late Sept, 1999 a one-meter resolution black and white image of Washington, D.C. reportedly showing detail not available before commercially.* Such high-resolution images could be commercially marketed to farmers, government officials, scientists and others who want accurate information about various areas of Earth. An advantage of CNES's **Spot 5** satellite scheduled for lift-off in late 2001 using a medium-

* Space News, Oct. 26, 1999, p.11.

resolution camera would be that it could cover the Earth every two days whereas for high resolution imagers such coverage may take much longer.

The first commercial liftoff of a U.S. direct TV satellite on behalf the **Sea Launch Co.**, an international consortium led by Boeing, took place Oct. 9, 1999. A Ukrainian-Russian rocket carried the satellite from a former oil drilling platform in the Pacific near the equator. Also **Thuraya**, a regional mobile-telephone satellite, is expected to use a Sea Launch rocket before July 2000.

Manfred Lachs Space Law Moot Court Competition

Vanderbilt University and the University of Paris XI, were in the finals of the 8th Manfred Lachs Space Law Moot Court Competition (Brezonac vs. Mastodonia) dealing with the Mor-Toaler Sea-Launch Project. The contest was held October 7, 1999, during the IISL Colloquium in the Great Hall of Justice at the Peace Palace in The Hague and was adjudged by ICJ Judges Guillaume (presiding), Koroma and Vereshchetin. **Vanderbilt University** won the finals, the **University of Paris XI** was runner up. Best oralist was *Alan Mingledorff* of the U. S. Best memorial was that of the French team whose members were *Irene Aupetit* and *Mickael Torrado*.*

Other Events

The Second International Mars Convention met August 12-15, 1999 in Boulder, Colorado.

The first gathering of the global space industry, the **International Space Business Assembly**, with the participation of ESA, the Canadian Space Agency, the British National Space Centre, CNES, the Indian Space Research Organization and the U.S. Department of Commerce was held November 2-4, in Washington D.C.

The IAA is proposing a new study dealing with the possible establishment of a **radio observatory on the Farside of the Moon**.

Brief News in Retrospect

NASA's Near Earth Asteroid Rendezvous (NEAR) spacecraft is on course for an early 2000 encounter with the asteroid 433 Eros.

The New Global Positioning System (GPS) Modernization Initiative announced by Vice President Gore on Jan. 25, 1999 is to enhance the service provided to civil, commercial and scientific users worldwide.

On May 19, 1999 a White House memorandum stressed the importance that we fully understand the root causes behind the recent **launch vehicle failures** and take corrective action. One possible

* The case and the winning memorial to appear in 28 J. Space L.(2000).

ramification of failures could be that an owner may have difficulty in insuring the construction and launch of a satellite, plus five years in orbit, for less than 15 % premium as compared to 10-13% rates of earlier years.

The first U.S. spaceflight commanded by a woman, Eileen Collins, was launched on July 23, 1999 aboard the shuttle Columbia and successfully completed after placing in orbit an X-ray telescope, named **Chandra**, to study the dark side of the universe and provide images of x-ray emissions from galactic collisions, stellar explosions and black holes.

Liberty Bell 7, Astronaut Gus Grissom's Mercury capsule, which sank on July 21, 1961, was recovered from the Atlantic Ocean floor. Grissom who escaped drowning died recently.

The intentionally caused crash of **Lunar Prospector** on July 31, 1999 failed to resolve the question of whether there is water on the Moon.

NASA's **Cassini** probe completed its second flyby of Venus in June 1999 and is on course of its seven-year trip to Saturn.

The recently released close-up picture of Jupiter's moon Io, taken by the **Galileo** spacecraft launched 10 years ago, reaching Jupiter in December 1995 showed a sea of ash and a lava around an erupting volcano.

The **Mars Society** plans to build a research station in the Canadian Arctic Circle to simulate a Mars experience on Earth.

The **X-33**, a reusable spacecraft to replace the aging space shuttle, aims to demonstrate that the cost of putting payloads in space could be reduced from \$10,000 per pound to \$1,000 per pound. NASA's other experimental programs involve the **X-34**, an unmanned rocket to be launched from a converted airliner, and the **X-37** which could be carried into orbit on an expandable launch vehicle or on the space shuttle. Another experimental spacecraft **Venture Star**, twice the size of the X-33, could be placed in orbit in a single stage not requiring multiple rockets.

NASA's **Mars Climate Orbiter**, a \$125 million spacecraft was lost by scientists' error to convert English units to metric measurements just as it was about to go into orbit around the Red Planet in late Sept. 1999 but on Oct. 30 the **Mars Polar Lander** successfully fired its thruster for a touch down near the Martian South Pole expected December 3, 1999.

NASA could offer up to two shuttle flights for paying customers and is willing to turn over operation of the international space station to private enterprise, within a decade, if someone can handle the job.

The launch of the space shuttle **Discovery** to repair **Hubble gyroscopes** has been moved up from June 2000 to Dec. 6, 1999.

On Sept. 25, 1999 **Ariane 4** of CNES launched from Korou, French Guiana, the **Telstar 4** satellite for Loral Space & Communications Ltd.

An hourly shower of 140-80 **Leonid** meteors dazzled stargazers.

Celestis Foundation of Houston conducts **space burials** by launching ashes of cremated remains of an individual into low earth orbit.

China launched an unmanned spacecraft and is on its way to become the third country to be able to launch a man into space.

B. FORTHCOMING EVENTS

Space 2000 and Robotics 2000 will be held Feb. 28-March 2, 2000 in Albuquerque, New Mexico.

"Bringing Space into Education" is the title of a **IAF specialists symposium** in Strasbourg, France, April 3-5, 2000.

The 13th **Humans in Space Symposium** on Exploring Space will be held **May 20-26, 2000** in **Santorini, Greece**.

The 43d **IISL Colloquium** will be held in **Rio de Janeiro, Brazil, Oct. 2-6, 2000**. The following topics are scheduled for discussion:

SESSION 1: Law and Ethics of Space Activities in the New Millennium (What is the role of law in bringing the benefits of space to humanity, including consideration of the needs and interests of developing countries?). Chairmen: Prof. Monserrat Filho (Brazil) and Prof. Williams (Argentina); Rapporteur: Mr. C. Rebellon Betancourt (Colombia).

SESSION 2: State Responsibility and Liability for Non-State Space Activities (What is the responsibility and liability of states with regard to activities in space by non-state entities, such as private corporations, consortia, international non-governmental organizations or other non-state entities?). Chairmen: Dr Orrico (Mexico) and Prof. Back Impallomeni (Italy), Rapporteur S. Ospina (Colombia/USA).

SESSION 3: The Interrelation between Public International Law and Private International Law in the Regulation of Space Activities (Papers should focus on the interaction between private law aspects of space activities with regard to insurance, financing and related issues, and international space law). Chairmen: Prof. K.-H. Böckstiegel (Germany) and Mrs. Ramirez Arellano (Mexico), Rapporteur Ms. Valnora Leister.

SESSION 4: Other Legal Matters, including Recent Developments in the Regulation of Space Debris, the Exploitation of Non-Terrestrial Resources, and the Implications of Proposed Missile Defense Systems. Mrs. Clayton-Townsend (USA) and Prof. Cocca (Argentina), Rapporteur Mrs. Fonseca de Souza Rolim (Brazil).

ITU Telecom AMERICAS 2000 will be held in Rio de Janeiro, April 10-15, 2000, **ITU Telecom World 2000** in Geneva, Oct. 2000 and **Telecom Asia** will be hosted in Hong Kong, China, December 4-9, 2000. In 2001 there will regional events in Africa, the Middle East and Arab States with Americas and Asia Events following in 2002.

The **44th IISL Colloquium** is scheduled to take place in Toulouse, France, **October 1-5, 2001** during the 52nd IAF Congress.

The 69th and 70th Conferences of the ILA will be held in London, July 2000, and New Delhi, India, in April 2002, respectively.

ITU's World Telecommunications Development Conference is scheduled for the first quarter and the Plenipotentiary Conference for the second quarter of 2002 in Morocco.

BOOK REVIEWS/NOTICES*

INTERNATIONAL LEGAL PROBLEMS IN THE PEACEFUL EXPLORATION AND USE OF OUTER SPACE, by Maurice N. Andem (University of Lapland 1992), pp. 512.

This carefully structured and comprehensive book on international space law has taken into account the positions advanced by both eastern and western authorities. They have been dealt with in an even-handed and objective manner. Attention has also been given to the UN's "Programme on Space Applications," with its benefits for both developing countries, and through their own research and their own dissemination of scientific information, for the advantage of all who are engaged in outer space activities.

Among the book's ten chapters substantial attention is given to telecommunications. The author regards the commercial use of outer space resources in the future as a major issue. Every chapter is the product of comprehensive research. In each chapter the author has carefully delineated his own evaluations and conclusions.

The author in the preparation of this book has received the benefit of advice and criticism from many important figures in the areas of "Space Law as a New Branch of Public International Laws," as he has titled Chapter I of the book. These include an extended preface by Judge Manfred Lachs, and by expressions of appreciation to Professor Dr. I.H. Ph. Diederiks-Verschoor and Professor W. Paul Gormely, among others.

The book contains a comparative table consisting of the working papers submitted to COPUOS on the geostationary orbit by four equatorial States and by the German Democratic Republic. The bibliography is divided into two parts, with 16 pages devoted to books and articles and with 20 pages identifying important space documents. There is a good index.

Although published seven years ago this book has weathered the intervening years. It should be a part of the working library for experts in international space law.

Carl Q. Christol

University of Southern California, Los Angeles, California

PROCEEDINGS OF THE FOUNDING CONVENTION OF THE MARS SOCIETY - AUGUST 13-16, 1998, edited by Robert M. Zubrin & Maggie Zubrin (Parts I-III, Univelt 1999), pp. 1133.

Close to 700 enthusiasts attended the Founding Convention of the Mars Society on August 13-15, 1998 at the University of Colorado in

* Compiled and edited by Michael A. Gorove, Attorney at Law, Associate Editor, J. SPACE L.

Boulder, Colorado the proceedings of which constitute the contents of this massive publication containing presentations of nearly 100 contributors skillfully organized and edited by Robert and Maggie Zubrin.

The rich panorama of discussions and research papers presented - which extend *inter alia*, to historical, educational, fundraising and exploratory aspects (Part I.), as well as to issues of software, question of life, use of technology, power sources, resource utilization, human factors (Part II), medical issues, mission strategies, terraforming, and timekeeping (Part III) - defies more than a perfunctory mention in a brief review, particularly since most of these appear to have no direct legal relevance and also because a great deal has been published about the technology, science and socioeconomic factors involved in Mars exploration. Nonetheless, it has been most refreshing for this law journal to find a whole chapter (Ch. 17) devoted to legal ramifications, covering Martian Law (Hudgins), Legislation on Space Law Concepts (Hurtak), Martian Equality (Jones), Mars Governance (O'Donnell), Politics of a Mars Colony (Archbold, Hessler & Thompson) and the Rights of Mars (R. Zubrin).

In all fairness to the contributions which appear outside of the legal chapter at least one dealing with the commercialization of space (Livingston) must be mentioned inasmuch as it clearly touches on the politico-legal aspects of Mars exploration.

The editors should be congratulated in including law-oriented discussions in a publication which is not directed toward a legal audience. This approach which has unfortunately not always been followed fails to overcome the isolationist tendencies of the scientific and legal professions notwithstanding the multidisciplinary aspects of most contemporary problems.

The publication includes a useful appendix listing the sponsors, the schedule as well as the abstracts of the conference and also has a numerical and an author index.

TRENDS IN TELECOMMUNICATION REFORM, by ITU's Telecommunication Development Bureau (Geneva, 1999).

This recent publication by ITU's Telecommunication Development Bureau focuses on convergence and regulation, particularly on the "impact of digital convergence on the reform of the telecommunications sector, notably on national regulatory regimes." It notes that there has been a sharp increase in the number of legislative enactments providing for different models of telecommunications regulatory bodies around the world. This trend, involving a variety of ownership and licensing frameworks, is expected to continue into the new millennium.*

* ITU News 39-42 (No. 8, 1999).

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CURRENT DOCUMENTS

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GENERAL ASSEMBLY

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3 February 1999

Fifty-third session
Agenda item 82

RESOLUTION ADOPTED BY THE GENERAL ASSEMBLY

*[on the report of the Special Political and Decolonization Committee
(Fourth Committee) (A/53/596)]*

53/45. International cooperation in the peaceful uses of outer space

\ *The General Assembly,*
 Recalling its resolutions 51/122 of 13 December 1996 and 52/56 of
10 December 1997,

Deeply convinced of the common interest of mankind in promoting
the exploration and use of outer space for peaceful purposes and in
continuing efforts to extend to all States the benefits derived therefrom,
and also of the importance of international cooperation in this field, for
which the United Nations should continue to provide a focal point,

Reaffirming the importance of international cooperation in
developing the rule of law, including the relevant norms of space law and
their important role in international cooperation for the exploration and
use of outer space for peaceful purposes, and of the widest possible
adherence to international treaties that promote the peaceful uses of outer
space,

Concerned about the possibility of an arms race in outer space,

Recognizing that all States, in particular those with major space capabilities, should contribute actively to the goal of preventing an arms race in outer space as an essential condition for the promotion of international cooperation in the exploration and use of outer space for peaceful purposes,

Considering that space debris is an issue of concern to all nations,

Noting the progress achieved in the further development of peaceful space exploration and applications as well as in various national and cooperative space projects, which contributes to international cooperation, and the importance of further international cooperation in this field,

Taking note of the report of the Secretary-General on the implementation of the recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space,²

Noting with satisfaction that the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) will be convened at the United Nations Office at Vienna from 19 to 30 July 1999 as a special session of the Committee on the Peaceful Uses of Outer Space, open to all States Members of the United Nations,

Having considered the report of the Committee on the Peaceful Uses of Outer Space on the work of its forty-first session,³

1. *Endorses* the report of the Committee on the Peaceful Uses of Outer Space on the work of its forty-first session;³

2. *Invites* States that have not yet become parties to the international treaties governing the uses of outer space⁴ to give consideration to ratifying or acceding to those treaties;

3. *Notes* that, at its thirty-seventh session, the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space, in its

¹ A/53/265.

² See Report of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space, Vienna, 9-21 August 1982 and corrigenda (A/CONF.101/10 and Corr.1 and 2).

³ Official Records of the General Assembly, Fifty-third Session, Supplement No. 20 (A/53/20).

³ Official Records of the General Assembly, Fifty-third Session, Supplement No. 20 (A/53/20).

⁴ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (resolution 2222 (XXI), annex); Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (resolution 2345 (XXII), annex); Convention on International Liability for Damage Caused by Space Objects (resolution 2777 (XXVI), annex); Convention on Registration of Objects Launched into Outer Space (resolution 3235 (XXIX), annex); and Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (resolution 34/68, annex).

working group, continued its work as mandated by the General Assembly in its resolution 52/56;⁵

4. *Endorses* the recommendations of the Committee that the Legal Subcommittee, at its thirty-eighth session, taking into account the concerns of all countries, particularly those of developing countries, should:

(a) *Continue* its consideration of review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space;⁶

(b) *Continue*, through its working group, its consideration of matters relating to the definition and delimitation of outer space and to the character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union;

(c) *Continue* its review of the status of the five international legal instruments governing outer space and establish a working group to consider the item;

(d) *Continue* its consideration of other matters, including informal consultations on specific proposals already made for possible new agenda items for the Legal Subcommittee;

5. *Also endorses* the recommendation of the Committee that the Legal Subcommittee, at its thirty-eighth and thirty-ninth sessions, should suspend consideration in its working group of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space pending the results of the work in the Scientific and Technical Subcommittee, without prejudice to the possibility of reconvening its working group on that item if, in the opinion of the Legal Subcommittee, sufficient progress was made in the Scientific and Technical Subcommittee at its session in 2000 to warrant the reconvening of the working group;

6. *Notes* that, in the context of paragraph 4 (c) above, the Legal Subcommittee would implement the work plan that it adopted at its thirty-sixth session;⁷

7. *Endorses* the recommendations and agreements concerning the organization of work in the Legal Subcommittee;

8. *Notes with satisfaction* that, in accordance with paragraph 9 of General Assembly resolution 52/56, the Committee, at its forty-first session, reviewed further its requirements for unedited verbatim transcripts and agreed to continue the use of those transcripts;

⁵ See Official Records of the General Assembly, Fifty-third Session, Supplement No. 20 (A/53/20), chap. II.D.

⁶ See resolution 47/68.

⁷ See A/AC.105/674, annex II.B.

9. *Takes note* of the agreement reached by the Committee at its fortieth session on the composition of the bureaux of the Committee and its subsidiary bodies for the second term starting in 2000, in the context of the implementation of the measures relating to the working methods of those bodies, which were endorsed by the General Assembly in paragraph 11 of its resolution 52/56;

10. *Notes* that the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space, at its thirty-fifth session, continued its work as mandated by the General Assembly in its resolution 52/56;8

11. *Notes with satisfaction* that the Scientific and Technical Subcommittee continued to consider on a priority basis the agenda item on space debris and that the work of the Subcommittee at its thirty-fifth session concentrated on the topic of space debris mitigation measures, on the basis of the multi-year work plan adopted by the Subcommittee at its thirty-second session;9

12. *Notes* that the Scientific and Technical Subcommittee, during its consideration of the item on space debris at its thirty-sixth session, will concentrate on finalizing the full technical report on space debris for adoption;

13. *Endorses* the recommendations of the Committee that the Scientific and Technical Subcommittee, at its thirty-sixth session, taking into account the concerns of all countries, particularly those of developing countries, should consider the following priority items:

(a) Preparations for the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) by the Advisory Committee for UNISPACE III;

(b) Space debris;

(c) The United Nations Programme on Space Applications and the coordination of space activities within the United Nations system;

14. *Also endorses* the recommendation of the Committee that in view of the abbreviated schedule of work of the Scientific and Technical Subcommittee at its thirty-sixth session and the preparatory work to be conducted for UNISPACE III, the Subcommittee should suspend, as an exception, its consideration of the following items for one year, to be resumed at its thirty-seventh session:

(a) General exchange of views;

(b) Matters relating to remote sensing of the Earth by satellites, including, inter alia, applications for developing countries;

(c) Use of nuclear power sources in outer space;

⁸ See Official Records of the General Assembly, Fifty-third Session, Supplement No. 20 (A/53/20), chap. II.C.

⁹ A/AC.105/605, para. 83.

(d) Questions relating to space transportation systems and their implications for future activities in space;

(e) Examination of the physical nature and technical attributes of the geostationary orbit and of its utilization and applications, including, inter alia, in the field of space communications, as well as other questions relating to space communications developments, taking particular account of the needs and interests of developing countries;

(f) Matters relating to life sciences, including space medicine;

(g) Progress in national and international space activities related to the Earth's environment, in particular progress in the International Geosphere-Biosphere (Global Change) Programme;

(h) Matters relating to planetary exploration;

(i) Matters relating to astronomy;

(j) The theme fixed for the special attention of the Subcommittee; the Committee on Space Research and the International Astronautical Federation, in liaison with Member States, should be invited to arrange a symposium, with as wide a participation as possible, to be held during the first week of the session of the Subcommittee, to complement discussions within the Subcommittee on the special theme;

15. *Notes* that the theme for the special attention of the Scientific and Technical Subcommittee at its thirty-seventh session will be identified by the Subcommittee at its thirty-sixth session;

16. *Endorses* the four-year work plan for consideration of the agenda item on the use of nuclear power sources in outer space adopted by the Scientific and Technical Subcommittee at its thirty-fifth session, and agrees that the Subcommittee should reconvene its Working Group on the Use of Nuclear Power Sources in Outer Space at its thirty-seventh session to conduct its work in accordance with the work plan;

17. *Notes* that the Working Group of the Whole to Evaluate the Implementation of the Recommendations of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space of the Scientific and Technical Subcommittee concluded its evaluation of the implementation of the recommendations of the Second Conference, and takes note of the conclusions of the Working Group of the Whole, as endorsed by the Committee and as contained in the report of the Working Group of the Whole;¹⁰

18. *Notes* with satisfaction that, in accordance with General Assembly resolution 52/56, the Working Group of the Whole assisted the Advisory Committee for UNISPACE III in its preparatory work for the Conference, and agrees that the Advisory Committee should reconvene the Working Group of the Whole at its 1999 session to finalize its preparatory work;

¹⁰ A/AC.105/697 and Corr.1, annex II.

19. *Endorses* the United Nations Programme on Space Applications for 1999, as proposed to the Committee by the Expert on Space Applications;¹¹

20. *Notes* with satisfaction that, in accordance with paragraph 30 of General Assembly resolution 50/27 of 6 December 1995, the Centre for Space Science and Technology Education in Asia and the Pacific continued its education programme in 1998 and that significant progress has been achieved in establishing regional centres for space science and technology education in the other regions;

21. *Notes* that, pursuant to the request in paragraph 29 of General Assembly resolution 51/123, the Committee and its Scientific and Technical Subcommittee, at their 1998 sessions, carried out the tasks entrusted to them in their roles as the Preparatory Committee and the Advisory Committee, respectively, for UNISPACE III;

22. *Endorses* the recommendations of the Preparatory Committee at its 1998 session, concerning, in particular, the structure of the draft report and the provisional rules of procedure of UNISPACE III, as contained in its report,¹² and requests the Preparatory and Advisory Committees and the executive secretariat to carry out their tasks in accordance with those recommendations;

23. *Notes* with satisfaction the holding of the preparatory regional conference at Kuala Lumpur from 18 to 22 May 1998 and its recommendations, the preparatory regional conference at Concepcio'n, Chile, from 12 to 16 October 1998 and the Concepcio'n Declaration of 16 October 1998¹³ and the preparatory regional conference at Rabat from 26 to 30 October 1998, and also notes with satisfaction that a preparatory regional conference will be held in Romania from 25 to 29 January 1999;

24. *Encourages* all Member States, organizations within the United Nations system and other international organizations with space activities, as well as space-related industries and national organizations, invited through their Governments, to contribute actively to achieving the objectives of UNISPACE III;

25. *Invites* Member States, space agencies and space-related international and national organizations to support the preparations for UNISPACE III by providing the executive secretariat with junior or senior experts, by co-sponsoring activities related to UNISPACE III and by providing other voluntary contributions;

26. *Notes with satisfaction* that in order to service UNISPACE III, to the extent feasible, within existing resources, the savings realized by the Committee and its subsidiary bodies in 1998 and 1999 in

¹¹ See A/AC.105/693 and Corr.1, sect. I.

¹² See Official Records of the General Assembly, Fifty-third Session, Supplement No. 20 (A/53/20), chap. II.B. 13/ A/C.4/53/8, annex.

conference-servicing resources by shortening, as an exception, their regular annual sessions will be utilized;

27. *Agrees* that pre-Conference consultations by all States Members of the United Nations should be convened on 18 July 1999 at the site of UNISPACE III, within existing resources, and requests the Preparatory Committee to report during the consultations on the work it has conducted;

28. *Requests* UNISPACE III to submit a report to the General Assembly at its fifty-fourth session;

29. *Agrees* that in view of the abbreviated schedule of work of the Committee at its forty-second session and the preparatory work to be conducted for UNISPACE III, the Committee should suspend its work on the following items for one year, to be resumed at its forty-third session:

(a) Consideration, as a matter of priority, of ways and means of maintaining outer space for peaceful purposes;

(b) Consideration of the item entitled "Spin-off benefits of space technology: review of current status";

30. *Recommends* that more attention be paid to all aspects related to the protection and the preservation of the outer space environment, especially those potentially affecting the Earth's environment;

31. *Considers* that it is essential that Member States pay more attention to the problem of collisions of space objects, including those with nuclear power sources, with space debris, and other aspects of space debris, calls for the continuation of national research on this question, for the development of improved technology for the monitoring of space debris and for the compilation and dissemination of data on space debris, also considers that, to the extent possible, information thereon should be provided to the Scientific and Technical Subcommittee, and agrees that international cooperation is needed to expand appropriate and affordable strategies to minimize the impact of space debris on future space missions;

32. *Urges* all States, in particular those with major space capabilities, to contribute actively to the goal of preventing an arms race in outer space as an essential condition for the promotion of international cooperation in the exploration and use of outer space for peaceful purposes;

33. *Emphasizes* the need to increase the benefits of space technology and its applications and to contribute to an orderly growth of space activities favourable to sustained economic growth and sustainable development in all countries, particularly in the developing countries;

34. *Requests* the specialized agencies and other international organizations to continue and, where appropriate, enhance their cooperation with the Committee and to provide it with progress reports on their work relating to the peaceful uses of outer space;

35. *Requests* the Committee to continue its work, in accordance with the present resolution, to consider, as appropriate, new projects in outer space activities, and to submit a report to the General Assembly at its fifty-fourth session, including its views on which subjects should be studied in the future.

*78th plenary meeting
3 December 1998*

UNISPACE III

THIRD UNITED NATIONS CONFERENCE ON THE EXPLORATION AND PEACEFUL USES OF OUTER SPACE EXPLORATION AND PEACEFUL USES OF OUTER SPACE

Vienna
19-30 July 1999

The Space Millennium: Vienna Declaration on Space and Human Development

The States participating in the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III), held in Vienna from 19 to 30 July 1999,

I.

Reaffirming the aims and principles of the Charter of the United Nations, the principles of international law and the relevant resolutions of the General Assembly,

Having in mind that humans have always gazed at the sky with wonder and that from such was born the curiosity that drove early astronomers to study the movements of celestial bodies, from which the foundations of modern space science and technology were laid,

Recognizing the importance of space science and space applications for the fundamental knowledge of the universe, education, health, environmental monitoring, management of natural resources, disaster management, meteorological forecasting and climate modelling, satellite navigation and communications, and the major contribution that space science and technology make to the well-being of humanity and specifically to economic, social and cultural development,

Considering that space transcends national boundaries and interests, permitting the development of global solutions to address common challenges and providing a vantage point from which to view planet Earth,

Noting the positive developments in international relations since the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space, held in Vienna from 9 to 21 August 1982,¹

Reaffirming the common interest of all humanity in the progress of the exploration and use of outer space for peaceful purposes, and convinced of

¹ See Report of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space, Vienna, 9-21 August 1982 (A/CONF.101/10 and Corr. 1 and 2).

the need to prevent an arms race in outer space as an essential condition for the promotion of international cooperation in this regard,

Recognizing that outer space should be the province of all humankind, to be utilized for peaceful purposes and in the interests of maintaining international peace and security, in accordance with international law, including the United Nations Charter, and as proclaimed in the Treaty of Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies,²

Reaffirming General Assembly resolution 51/122 of 13 December 1996, entitled Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries³

Recognizing that the orderly conduct of space activities is beneficial to all countries, whether or not they have already become active in space research or have started to utilize space applications, and that active support for space activities is expressed in the observance by States and by international organizations of the provisions of the outer space treaties,

Noting with satisfaction that the United Nations conferences on the exploration and peaceful uses of outer space were held in Vienna in 1968 and in 1982, leading to many new initiatives, including the creation of the United Nations Programme on Space Applications and the establishment of regional centres for space science and technology education, affiliated to the United Nations, which are contributing to a better understanding of space technology and to capacity-building in the utilization of space technology at the local level for social and economic development,

Noting the benefits and applications of space technologies in addressing the unprecedented challenges to sustainable development, and noting also the effectiveness of space instruments for dealing with the challenges posed by the pollution of the environment, depletion of natural resources, loss of biodiversity and the effects of natural and anthropogenic disasters,

Recognizing that significant changes have occurred in the structure and content of world space activity, as reflected in the increasing number of participants in space activities at all levels and the growing contribution of the private sector in the promotion and implementation of space activities,

Recognizing also that the use of space technology should accord with the principles set out in Agenda 21⁴ for the benefit of all nations and

² General Assembly resolution 2222 (XXI), annex.

³ General Assembly resolution 51/122.

⁴ Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992 (United Nations publication, Sales No. E.93.I.8 and corrigenda), vol. I: Resolutions adopted by the Conference, resolution I, annex II.

peoples and that its applications should extend to the developing countries,

Recognizing further the role played in recent years in the field of space by the Committee on the Peaceful Uses of Outer Space, as well as the role of States in the formulation of policies and implementation of international cooperation,

Realizing that the above-mentioned challenges can be met for the benefit of all humanity by considering the mutual interests of all parties, sharing space knowledge and resources, coordinating missions and projects between interested States and strengthening international cooperation in the exploration and peaceful uses of outer space,

Convinced that efforts should be undertaken to facilitate substantive joint projects between "space-faring" and non-"space-faring" countries as well as among developing countries, which could result in the undertaking of projects that are beyond the means of individual countries,

Taking note with satisfaction of the valuable contributions of participants of the Technical Forum and Space Generation Forum to the work of UNISPACE III,

Declare the following as the nucleus of a strategy to address global challenges in the future:

1. Protecting the Earth's environment and managing its resources

Action should be taken:

(a) To develop a comprehensive, worldwide, environmental monitoring strategy for long-term global observations by building on existing space and ground capabilities, through the coordination of the activities of various entities and organizations involved in such efforts;

(b) To improve the management of the Earth's natural resources by increasing and facilitating the research and operational use of remote sensing data, enhancing the coordination of remote sensing systems, and increasing access to, and affordability of, Imagery;

(c) To develop and implement the Integrated Global Observing Strategy so as to enable access to and the use of space-based and other Earth observation data;

(d) To enhance weather and climate forecasting by expanding international cooperation in the field of meteorological satellite applications;

(e) To ensure, to the extent possible, that all space activities, in particular those which may have harmful effects on the local and global environment, are carried out in a manner that limits such effects, and to take appropriate measures to achieve that objective;

II. Using space applications for human security, development and welfare

Action should be taken:

(a) To improve public health services by expanding and coordinating space-based services for tele-medicine and for controlling infectious diseases;

(b) To implement an integrated, global system, especially through international cooperation, to manage natural disaster mitigation, relief and prevention efforts, especially of an international nature, through Earth observation, communications and other spacebased services, making maximum use of existing capabilities and filling gaps in worldwide satellite coverage;

(c) To promote literacy and enhance rural education by improving and coordinating educational programmes and satellite-related infrastructures;

(d) To improve knowledge-sharing by giving more importance to the promotion of universal access to space-based communications services and by devising efficient policies, infrastructures, standards and applications development projects;

(e) To improve the efficiency and security of transport, search and rescue, geodesy and other activities by promoting the enhancement of; universal access to and compatibility of space-based navigation and positioning systems;

(f) To assist States, especially developing countries, in applying the results of space research with a view to promoting the sustainable development of all peoples;

III. Advancing scientific knowledge of space and protecting the space environment

Action should be taken:

(a) To improve the scientific knowledge of near and outer space by promoting cooperative activities in such areas as astronomy, space biology and medicine, space physics, the study of near-Earth objects and planetary exploration;

(b) To improve the protection of the near and outer space environments through further research in and implementation of mitigation measures for space debris;

(c) To improve the international coordination of activities related to near-Earth objects, harmonizing the worldwide efforts directed at identification, follow-up observation and orbit prediction, while at the same time giving consideration to developing a common strategy that would include future activities related to near-Earth objects;

(d) To protect the near and outer space environments through further research on designs, safety measures and procedures associated with the use of nuclear power sources in outer space;

(e) To ensure that all users of space consider the possible consequences of their activities, whether ongoing or planned, before further irreversible actions are taken affecting future utilization of

near-Earth space or outer space, especially in areas such as astronomy, Earth observation and remote sensing, as well as global positioning and navigation systems, which have already become areas of concern because of the interference of the electromagnetic spectrum by unwanted emissions;

IV. Enhancing education and training opportunities and ensuring public awareness of the importance of space activities

Action should be taken:

(a) To enhance capacity-building through the development of human and budgetary resources, training and professional development of teachers and exchange of teaching methods, materials and experience, infrastructures and policy regulations;

(b) To increase awareness among decision makers and the general public of the importance of peaceful space activities for improving the common economic and social welfare of humanity;

(c) To establish and/or strengthen national mechanisms to coordinate the appropriate development of space activities and foster participation by all sectors concerned;

(d) To improve the sharing of information on and use of spin-offs from space activities, in particular between developed and developing countries, by making use of appropriate communications technologies;

(e) To encourage all countries to provide their children and youth, especially females, through appropriate educational programmes, with opportunities to learn more about space science and technology and their importance to human development and to participate fully in activities related to space science and technology, as an investment in the future;

(f) To create within the framework of the Committee on the Peaceful Uses of Outer Space, a consultative mechanism to facilitate the continued participation of young people from all over the world, especially those from developing countries and young women, in cooperative space-related activities;

(g) To consider the creation of awards to recognize outstanding contributions in space activity, in particular for youth;

V. Strengthening and repositioning of space activities in the United Nations system

Action should be taken:

(a) To reaffirm the role of the Committee on the Peaceful Uses of Outer Space, its two subcommittees and its secretariat in leading global efforts for the exploration and peaceful use of outer space on significant global issues;

(b) To assist in the improvement of the capacity-building process in developing countries and countries with economies in transition by emphasizing the development and transfer of knowledge and skills, by ensuring sustainable funding mechanisms for the regional centres for space science and technology education, affiliated to the United Nations, by enhancing support for the United Nations Programme on Space Applications through the provision of adequate resources, and by participating in the implementation of the new strategy of the Programme arising from UNISPACE III;

(c) To encourage the increased use of space-related systems and services by the specialized agencies and programmes of the United Nations and by the private sector around the world, where appropriate, in order to support United Nations efforts to promote the exploration and peaceful uses of outer space;

(d) To promote the efforts of the Committee on the Peaceful Uses of Outer Space in the development of space law by inviting States to ratify or accede to, and inviting international intergovernmental organizations to declare acceptance of, the outer space treaties⁵ developed by the Committee and by considering the further development of space law to meet the needs of the international community, taking into particular account the needs of developing countries and countries with economies in transition;

(e) To further consider the agenda structure and working methods of the Committee on the Peaceful Uses of Outer Space and its two subcommittees to better reflect issues of global concern, including international cooperation in space activities, taking into particular account

⁵ The existing treaties and agreements are the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (the "Outer Space Treaty"), adopted on 19 December 1966, opened for signature on 27 January 1967, entered into force on 10 October 1967, 95 ratifications and 27 signatures; the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (the "Rescue Agreement"), adopted on 19 December 1967, opened for signature on 22 April 1968, entered into force on 3 December 1968, 85 ratifications and 26 signatures; the Convention on International Liability for Damage Caused by Space Objects (the "Liability Convention"), adopted on 29 November 1971, opened for signature on 29 March 1972, entered into force on 1 September 1972, 80 ratifications and 26 signatures; the Convention on the Registration of Objects Launched into Outer Space (the "Registration Convention"), adopted on 12 November 1974, opened for signature on 14 January 1975, entered into force on 15 September 1976, 40 ratifications and 4 signatures and the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (the "Moon Agreement"), adopted on 5 December 1979, opened for signature on 18 December 1979, entered into force on 11 July 1984, 9 ratifications and 5 signatures.

the needs of developing countries and countries with economies in transition, as set out in the report of the Committee on its fortieth session;⁶

(f) To strengthen the coordination of mutually beneficial activities between the Committee on the Peaceful Uses of Outer Space and other United Nations entities;

VI. Promoting international cooperation

Action should be taken to follow up the decision by the States participating in UNISPACE III:

(a) To take note of the recommendations of the regional preparatory conferences for Africa and the Middle East, for Asia and the Pacific, for eastern Europe and for Latin America and the Caribbean that are relevant to efforts made at the global and regional levels, as set forth in sections A and B, respectively, of the annex to the present Declaration, and to call upon the international community, to the extent feasible, to consider those recommendations in appropriate forums;

(b) To establish a special voluntary United Nations fund for the purpose of implementing the recommendations of UNISPACE III, in particular the activities of the regional centres for space science and technology education, taking into account the recommendations of the regional preparatory conferences. All States are invited to support the fund financially or in kind. They will be invited to do so through an annual letter from the Secretary-General which, *inter alia*, will identify priority project proposals for enhancing and assisting technical cooperation activities, in particular for human resource development. The Secretariat will report annually to the Committee on the Peaceful Uses of Outer Space, listing those States which have responded;

(c) To adopt measures aimed at identifying new and innovative sources of financing at the international level, including in the private sector, in order to support the implementation of the recommendations of UNISPACE III in developing countries;

(d) To encourage all States and international organizations to strengthen their efforts in promoting the peaceful uses of outer space for the benefit and in the interest of all States, taking into particular account the interest of developing countries and countries with economies in transition, by facilitating programmes and activities between spacefaring and non-space-faring countries, as well as among developing countries, and involving civil society, including industry;

⁶ Official Records of the General Assembly, Fifty-second Session, Supplement No. 20, (A/52/20), annex.

Recognize the tremendous achievements of space science and technology to date, look forward with confidence to achieving even greater progress in the future, and stress the vital importance of attaining the goals and executing the actions outlined above and described in detail in the report of UNISPACE III;

Emphasize that the shared objective of sustainable development for all countries will require timely and effective action to achieve the stated goals and that such an endeavor will provide ample scope for space science and technology to play their proper role as major contributors to people's well-being;

Recognize that the promotion of bilateral, regional and international cooperation in the field of outer space must be guided by General Assembly resolution 51/122;

II.

Recalling that 4 October 1957 was the date of the launch into outer space of the first human-made Earth satellite, SPUTNIK I, thus opening the way for space exploration;

Recalling also that 10 October 1967 was the date of the entry into force of the Treaty on Principles Governing the Activities of States in the Exploration and Uses of Outer Space, including the Moon and Other Celestial Bodies;⁷

Decide, in order to contribute to the achievement of the objectives of UNISPACE III, in particular that of increasing awareness among decision makers and civil society of the benefits of the peaceful uses of space science and technology for sustainable development, to invite the General Assembly to declare, according to its procedures, "World Space Week" between 4 and 10 October for the yearly celebration at the international level of the contribution that space science and technology can make to the betterment of the human condition;

Recommend to the General Assembly that it review and evaluate, within existing resources, the implementation of the recommendations of UNISPACE III after a period of five years, and thereafter as appropriate, and the reviews are to be conducted on the basis of preparatory work by the Committee on the Peaceful Uses of Outer Space open to the participation of all Member States of the United Nations and the specialized agencies, of the United Nations system and observers.

⁷ General Assembly resolution 2222 (XXI), annex.

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