

REPORT OF THE IISL SPACE LAW COLLOQUIUM IN VANCOUVER, CANADA, OCTOBER 2004

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(edited by Tanja Masson-Zwaan)

A) SESSION 1 - NEW DEVELOPMENTS IN NATIONAL SPACE LEGISLATION

Chairmen: Dr. Frans von der Dunk, The Netherlands, and Prof. Dr. Stephan Hobe, Germany

Rapporteur: Dr. Patrick Salin, Canada.

Sylvia Ospina, "National Space Legislation and the Digital Divide: Will National Laws on Space Activities Bridge the Gap?"

Most nations legislate some kind of space activity, whether it is large and of a full-size nature or small and restricted to their minimal technical obligations as a consequence of their ITU membership. The United States is so far the country with the most highly developed space-related legislation and regulations. Several Latin America countries have a space program but are quite dependent on developed countries' industries and agencies. Several preliminary measures should be taken before embarking on a national space program: (1) sign and ratify the space treaties in order to show their national commitment, (2) study and analyze the need for a national space legislation, including their liability and responsibility dimension, (3) carry a survey of the different national entities that will use satellite capacity, and (4) adequate funding must be secured before envisioning a space agency or program.

Lucy Stojak, "Regulatory Framework for Commercial Remote Sensing Satellite Systems: The Canadian Story".

The Radarsat program is the driver of the Canadian space data policy. It contributed to the adoption of a hybrid public-private funding and operational arrangement signed by the Canadian Space Agency (CSA) and its program partners, while a private company was created and granted exclusive distribution rights. Moving towards private ownership with Radarsat-2, in June 1999 the Government of Canada (GOC) announced a new commercial remote sensing satellite legislation, the Access Control Policy, to ensure authorization and continuing activities of its non-governmental entities. Hopefully, that legislation will be signed into effect prior to the launch of Radarsat-2 in 2005. The GOC reserves the rights of (1) review and approval of all systems owned, operated and registered in Canada, (2) interruption of normal commercial service and (3) priority access, both for national security interests. Requirements also have to be met for the operating of a commercial remote satellite system. This policy may be considered as a blueprint for a new legislation; it is also very much reminiscent of the US interim regulations on the licensing of private land remote-sensing space systems.

Rosa Maria Ramirez de Arellano, "Possible Consequences of the Lack of Secondary Legislation with Respect to Outer Space in Mexico".

The need for Mexican space regulations may arise from the occurrence of

accidents caused by space objects or through the development of space applications. The states of the Mexican federation are internationally bound by the agreements taken by the Mexican federal government. Facing the current legal vacuum and pending the occurrence of litigations that would involve space issues, the Judicial Power would have to undertake a big task in order to acquire the expertise in legal matters that are related to Outer Space. Endless discussions between the states of the federation and the government could be triggered by such new issues. This would not guaranty an optimum performance of work by the Mexican judges, no matter where they may have obtained their legal education. Coupled with potential disagreements that could occur between the courts themselves, this could impede on legal certainty in the Mexican Court System. Finally, it is the responsibility of the Mexican federal government to explain to all the Mexican people the obligations and rights that derive from Mexico's international agreements.

José Monserrat Filho, "Brazilian-Ukrainian Agreement on Launching Cyclone-4 from Alcantara: Impact on Brazilian Legislation".

This treaty was signed on 21 October 2003 by Brazil and Ukraine and ratified in both countries in February and September 2004 organizes a long-term cooperation in the use of the Cyclone-4 Launch Vehicle at the Alcantara Launch Center. It was completed by an MOU for future bilateral projects, both documents reflecting the commitment of top Brazilian and Ukrainian authorities to join efforts whenever possible to carry out a broad space cooperation program. This followed an always closer

relationship with Ukraine that started with the establishment of diplomatic relations between the two countries in February 1992. The treaty's general objective is to define conditions for long-term cooperation between the Parties for the development of Cyclone-4 Launch site on the Alcantara spaceport. The immediate foreseen impact of the Treaty is to have Brazil adhere to the Registration Convention. Brazil also has to enact a specific tax law in order to comply with certain Treaty provisions, and, more generally, an all-embracing space legislation in order to take into account this treaty and other future space endeavours so as to address several crucial issues.

Alvaro Fabricio dos Santos, "Brazilian Law No 10.821: compensation for the Families of the Victims of the Alcantara Disaster".

The 2003 accident on the Alcantara site was the first Brazil ever had. All the victims were Brazilian government employees. In the absence of a national legislation for space activities, the Brazilian Space Agency's own regulations serve as a de facto Brazilian space legal regime. Direct compensation payments were awarded to all victims' spouses, but defendants claimed that was not enough to compensate for the loss of the victims. A supplementary indirect compensation package was later enacted. What is at stake here is the amount of compensation compared with other types of similar schemes. Compensation on the basis of the Brazilian air code would have been much less favourable, while under the provisions of the Montreal Convention of 1999, which Brazil is expected to ratify soon, compensation would have been larger. This compensation law is a step towards a

national Brazilian space legislation. Together with the Brazilian Space Agency directives, all these legal provisions may be considered as placing Brazil as the ninth nation to establish a national space legislation in the narrow meaning of the word.

Steven Freeland, "The Australian Regulatory Regime for Space Launch Activities: Out to Launch?"

The Space Activities Act of 1998 is the principal Australian space law. It established a sophisticated licence system. It was also designed to extend international cooperation in space activities. The development of this legislation was made in order to provide a licensing framework for three projects that have not yet materialized. The Space Activities Act creates different licences for specific activities, including Australian launches outside Australia. This Act was amended in 2002 by a text which, inter alia, sought to define where does space begin by inserting a reference to the distance of 100 km above mean sea-level. It was also followed by a bilateral Cooperation Agreement with Russia, which came into force in July 2004, and is supposed to facilitate the development of the launch facility project at Christmas Island. Significant progress still has to be done in order to have a viable Australian private launch industry. The latest space developments happened in relation with the US missile defence program to which Australia became a partner.

Toshio Kosuge, "New Developments in National Space: Law and Policy in Japan".

Due to the consequences of the Cold War of the 1950s, 1960s and 1970s, Japanese Self Defence Forces have been

restricted in their development, equipped with US military satellite communication receiving stations and have not been directly involved in space utilization. It was not until the 1998 North Korea missile crisis that the Japanese government decided to develop a satellite system in order to collect information for crisis management purposes and national security issues. A Space Development Policy and an annual Plan have been initiated under the responsibility of a Space Development Committee. Various space programs have been initiated, including communication satellites, remote sensing satellites, weather satellites and launchers. Successes and failures have punctuated the implementation of these programs. Various scientific inter-ministry committees are involved in the definition and the implementation of these space programs. From Professor Kosuge's presentation, we may conclude that no specific legislation seems to be in the planning for the near future.

Mehmood Pracha, "Indian National Space Legislative Developments".

India adopted its first domestic space resolution in 1958 in order to underline the importance of space science, at the time of the Sputnik launch. The 1960s, 1970s, 1980s and 1990s saw the creation of the Indian space organizations, mainly the Indian Space Research Organization (ISRO), the Space Commission, the Department of Space (DOS) and various other public bodies. The Charter of the DOS makes it clear the purpose of space science and technology is to assist in the all-round development of the nation. So far, no specific legislation has been enacted in order to cover the whole spectrum of possibilities arising from space activities. There is an

acknowledged need for a comprehensive national space legislation that would set the rules of jurisdiction over national Indian space activities, set a uniform and transparent licensing regime, set criminal jurisdiction over illegal space activities including accident litigation, set indemnity against liability incurred by private parties, encourage commercial space industry and address numerous other space-related issues.

Michael Gerhard, Kai-Uwe Schrogl, "A Common Shape for National Space Legislation in Europe: Summary and Conclusions of the Project 2001 Plus Workshop".

National space legislation have been enacted in eleven states. Because of the international public law basis of such legislation, already enacted or in the making, European space activities may come under the jurisdiction of more than one of those national laws. Space-related entities may thus be tempted to move their headquarters under any special jurisdiction of their choice. Harmonised space legislation might be preferable in order to foster national industries by ensuring legal security and comparable administrative requirements and thwart "licence shopping" tendencies. Based on the Project 2001 Building Blocks for National Space Legislation, four aspects of harmonisation might be identified: administrative procedure and fees for an authorization, technical safety evaluation, indemnification regulation and third party liability insurance. These aspects need to be dealt with at least on a European level. Since there is no competence of the European Union and since there will be no adequate competence within the draft European Constitution, a realistic approach might be seen in cooperation and coordination

of legislating states, maybe through intergovernmental agreements.

Martha Mejia-Kaiser, "The 1989 Berlin Court Decision on Copyright to a Space Remote Sensing Image".

In 1988 the European Space Agency (ESA) sued a private company at the State Court of Berlin for having used an image of ESA's Meteosat archives for a local commercial advertisement. ESA claimed that no reference was made to its copyright. The court did not confirm ESA's claimed copyright. This case does not create a legal precedent but constitutes important legal material for space law. An individual or corporation may not define the terms and conditions of a copyright protection. The State of which a person is a national or that grants him national protection is the only one to decide if a given work qualifies for protection. National legislators determine the terms of copyright protection and when an author may be the beneficiary of the protection. Unilateral or multilateral claims are not valid if they do not fulfill the requirements of applicable copyright legislation. There may be thousands of contracts on satellite images, which invalidly attempt to benefit from copyright protection. Such clauses can never substitute themselves to the applicable legislation, which requires direct human intervention and human creativity.

Sergio Marchisio, "Italian Space Legislation Between International Obligation and EU Law".

The Italian model of national space legislation is characterized on one hand by a *de lege ferenda* process concerning the first building block and, on the other hand, by a special law concerning the

indemnification aspects. A draft bill has been recently submitted to the Council of Ministers concerning the authorization of the ratification of the 1975 Registration Convention, the enactment of norms regulating the registration of space objects and the authorization and supervision mechanisms for private national activities. The second building block is partially covered by Law 23 of 25 January 1983 on compensation of damage caused by space objects, which is largely inspired by the norms and procedures of general international law concerning diplomatic protection, broadening the State's obligation as for the indemnification of victims. Finally, the Italian situation cannot be assessed without making a reference to the legal framework of the European Union, since the ongoing involvement of the European Union in space matters would certainly affect the future prospects of national space legislation in European countries.

Gabriela Catalano Sgrosso, "Report on Changes in Space Law in Italy: Proposal of a Draft Legislation".

Italy ratified all the space treaties with specific laws or execution orders that simply refer to the content of the space treaties or agreements for direct implementation. The EU White Paper of 2003 contains proposals for harmonisation of the national policies of its member states, but does not detail a uniform formulation method. The Council and the Commission are supposed through community regulations to take care of this future community requirement. Since this action of the Council and of the Commission may take some time to be implemented, Italy should now issue a

comprehensive national space legislation that would cover the whole spectrum of its space activities as other European states have already done. It would formally define the scope of space activities, the nature of compulsory authorization for the carrying out of such activities, the conditions requested for such authorizations. It would also identify what public entities would be entrusted with the registration registry, with the granting of authorizations and who is to exercise control and supervision of Italian space objects.

Philippe Achilleas, "The New French Legislation on Satellite Frequencies Assignments".

France has modified its Post and Telecommunication Code in order to introduce a clear legal framework dealing with the use of satellite frequencies. The 2004 Loi pour la confiance dans l'économie numérique (LEN) has defined procedures for the utilisation of space frequencies and provided for sanctions in case of non compliance with the new prescriptions. This document, which is mainly directed towards Internet applications, has its Title 4 devoted to satellite frequencies assignments. The LEN extends its provisions to any private radio-communications satellite system. Requests must be directed to the Agence Nationale des Fréquences (ANFr), which will check their compatibility with the National Frequency Board. Frequency assignment must also be authorized by the Minister after consultation with either the Audiovisual Regulatory Authority (CSA) or the Telecommunications Regulatory Authority (ART). Authorization may be refused for specific reasons. The authorization holder must avoid harmful

interference and stop any broadcast upon request of the Ministry of telecommunications. He also must ensure control of the signal of each radio station.

Jean-François Mayence, "National Space Legislation: The Belgian Approach".

Belgium has a draft Space Act entitled *Avant-projet de loi relative aux activités de lancement et de guidage d'objets spatiaux*, which is expected to be approved as a law by the end of 2005. Its scope is restricted to the operation of space objects in the launching phase and during flight operations, and to their monitoring during their life cycle. It excludes application activities such as remote sensing and telecommunications or exploitation of payloads. The Belgian draft law clearly focuses on implementing Article VI, VII and VIII of the 1967 UN OS Treaty, and on a few other provisions. Essentially, this draft law provides for the setting-up of an authorization procedure, the setting-up and the maintenance of a national registry for space objects; and the opening of a legal action by the Belgian Government towards the operator, under detailed conditions, in the case of third party damage liability. Specific provisions also prevent any appropriation of fallen or landed space objects on the Belgian territory by derogation to civil law.

Frans G. von der Dunk, "Implementing the UN Outer Space Treaties: the case of the Netherlands".

Until recently, the amount of space activities that were undertaken on Dutch territory was no so important so as to justify a general and comprehensive action in the form of a national space

law. These activities were limited to industrial projects that were subcontracted by the European Space Agency (ESA) to Dutch companies or projects that were undertaken by Dutch parties within the EADS consortium. This paradigm changed radically with the privatisation trend that affected all European telecommunications carriers. In 2001, the Government of the Netherlands approved the development of a national legal framework for space-related activities on its territory. A new law was to provide a licensing system, the accompanying general requirements taking in balance its *bona fide* interests and the interests of the public, national and international, an arrangement dealing with liability issues, and an arrangement for a national registry. A first draft law to be produced by a senior Ministry official was originally scheduled for September 2004 but was postponed until a later time horizon.

B) SESSION 2 - INTERNATIONAL LAW AND PRACTICE OF AGREEMENTS ON COOPERATION REGARDING SPACE ACTIVITIES

Chairmen: Mr. Marco Ferrazzani, ESA and Ms Indra Heed, Canada

Rapporteur: Ms Macha Ejova, Russia

This session enjoyed a wide variety of papers from many authors and many opinions were expressed on a topic of such general interest as space cooperation.

The article of *Thomas Reuter* analyzes "*The framework agreement (FA) between the European Space Agency and the European Community*". The

main idea of this paper is that framework agreement creates an efficient basis for European space Policy even if the agreement doesn't change a lot the relation between ESA and EU. In this article, the author also explains the aim of 3 models of cooperation mentioned in article 5 of FA.

The second presentation is about "*The cooperation of ESA and EU and the relationship of their legal regimes*" by Katharina Kunzmann and Jürgen Cloppenburg. This paper analyses the consequences of possibly conflicting obligations arising out of provisions of ESA-Convention and EC-Treaty. The author's conclusion is that the prevailing treaty is ESA-Convention according to the international public law.

The next presentation is a summary of a paper "*European Space Policy: a common future for ESA and EU*" by Juan Manuel de Faraminan Gilbert. This paper analyses the given institutional answer i.e. the Framework Agreement between EU and ESA and the Treaty establishing a Constitution for Europe will bring to the real European Space Policy.

The paper presented by Eszter Pörnecezi is entitled "*ESA and EU cooperation for a better future of the European citizens*". This paper analyses the relationship between ESA and the EU. Why should the EU be involved in space activities? There are different reasons for cooperation between ESA and the EU like commercial opportunities, benefits for the citizens, etc... The author's conclusion is that the consistent European Space Policy will be achieved by the effective harmonization of both institutions.

The next paper "*Guaranteed access to Space: extension to countries without launcher?*" by Alain Conde Reis addresses the question how securing the access to space for space emerging countries without launcher. Because of the fact that the cooperation in launchers is close to the military area, there are difficulties to motivate such cooperation. The conclusion is the cooperation in launchers technology will be possible as the launchers move towards commercial exploitation and the United Nations is an appropriate framework for such cooperation in an equitable way.

The presentation of Professor C. Heather Walker, "*Bi-lateral agreements to facilitate launch projects and satisfy non-proliferation obligations*", focuses on the following question: How the countries have to balance the concerns of missile technology proliferation and need to allow countries to utilize proven launch vehicle system. After giving an overview of the non-proliferation regimes like Missile Technology Control Regime and Wassenaar Arrangement and looking at the structure of sample space launch vehicle system transfer agreements, the author gives some potential alternatives to avoid problems by harmonizing the export license review criteria and creating the international launch consortium.

The paper of Nathanael A. Horsley, "*Justifying the Arianespace monopoly: the role of consolidation, subsidies, and preferences in the evolving global launch industry*" addresses the question on how the competition law could influence the structure of the space launch industry in the future years.

The paper written by *Margaret A. Roberts* is about “*Organizing for science participation on the International Space Station*”. It focuses on the life science missions of the ISS and the legal mechanisms being employed by several space agencies to maximize science opportunities and international cooperation. The author’s conclusion is that the legal framework of the ISS program and the International Space Life Science Working Group (ISLSWG) provide a solid basis for a strong cooperation and may offer a model for planning future multinational programs.

The presentation by *John Hudiburg* on “*Techno-political space cooperation: a longitudinal analysis of NASA’s bilateral and multilateral agreements*” analyses some of the techno-political conditions contributing to the amount of cooperation experienced and recorded in NASA’s International Agreement Database. The author explains that by utilizing a cluster analysis approach, NASA’s international cooperation can be understood along both aggregate and regional perspectives. According to the author a new era of international cooperation in space seems to be starting regarding the US space exploration vision which calls for the international involvement.

The paper written by *Yun Zhao* focuses on “*Evaluation of space cooperation between China and Brazil: an excellent example of South-South cooperation*”. The cooperation between China and Brazil have as a legal basis the 2002 Protocol which provide a concrete framework for further cooperation in space projects. The cooperation between China and Brazil came with the first joint satellite, China–Brazil Earth

Resource satellite (CBERS) which shows that such cooperation has the added benefit of ensuring a balanced share of interests and that no state monopolizes the space resources put in common. Also, the model of this space cooperation can be extend to other developing countries.

The paper written by *Macha Ejova* is about “*Legal aspects of Franco-Russian commercial and industrial cooperation in space*”. This paper describes and analyzes the legal framework of commercial cooperation between France and Russia regarding three different levels of cooperation: institutional, inter agencies and private i.e. between Russian and French space companies. The paper focuses in particular on the project Soyouz in Guyana with the first launch planned in 2007.

The presentation of *Atsuyo Ito* concerns “*The legal aspects of the International Charter on Space and Major Disasters*”. The purpose of this paper is to examine the legal regime of the Charter and to describe the Charter’s principles, exposing the current limitations of the legal regime of Earth Observation. The author’s conclusion is that the current legal regime of EO is insufficient because it does not cover all the potential operations of the Charter and the lack of a clear liability regime. Consequently, the author highlights the need to provide a proper liability regime that protects both the victim and the helper in disaster monitoring and mitigation.

The last two papers have a more philosophical character.

The paper of *Liara M. Covert* is entitled “*The Post-human Era: a Time to Reduce*

Barriers to Intra-Professional Dialogue & Apply More Effective Policy Response". It analyses the notion of success and failure in emergence, expansion and enforcement of international space law using six case examples of global problems. The conclusion is that the leaders have to be less territorial in visions, law-making and actions, and have to cooperate to solve the current problems.

The paper of *Yasuaki Hashimoto* is entitled "*Asian Satellite Center – Promotion of Regional Peace and Security*". It examines the feasibility on the establishment of an international (regional) organization like a satellite center which contributes to the regional peace and security in Asia. The author's conclusion is that the foundation of such an organization will be a common benefit in regard to the avoidance of international crimes, environmental pollution, disputes and effective use of resources.

C) SESSION 3 - A GENERAL CONVENTION ON SPACE LAW

Chairmen: Prof. Ram S. Jakhu (Canada) and Dr. Said Mosteshar (U.K.)
Rapporteur: Ali Akbar Golrounia (Iran)

Dr. Lotta Viikari (Finland) presented the paper "*Problems Related to Time in the Development of International Space Law*". He noted that the time lag between the drafting, adoption, and entry into force of International Space treaties are so that by the time accords are implemented, the problems in question may have reached entirely new and different proportions and strategies. He proposed mechanisms such as interim agreements, self - correction treaties,

nonbonding codes of conduct, "Supranationally" adopted technical standards, and international certification mechanisms, to overcome this problem.

Mr. Kenneth M. Weidaw III (USA) presented the paper "*The General Convention on Space Law: Legal Issues Encountered in Establishing a Lunar and Martian Base*". He proposed that A General Convention on Space Law must be convened to address critical issues such as property rights on Lunar and Martian bases and environmental restrictions on Lunar and Martian Surface. He suggested voting delegates must be limited to those having active space programs that will directly participate in the Lunar and Martian Landing.

In the paper "*A Place for the Moon Agreement, in the General Convention on Space Law*". *Ms. Deirdre Ni Chearbhaill* (UK) argued that the General Convention on Space Law should ensure the inclusion of the Moon Agreement, so that human activities on the Moon can develop within a solid legal Framework and the space environment may be protected.

Dr. Ali Akbar Golrounia (Iran) presented the paper "*Private Sector Involvement in Space, a Need for Codification of Regulations*". He proposed in order to encourage the private sector to expand current and make new investments in outer space activities, as well as safe and standard operations. There is a need to establish international regulatory body, which can be achieved through a new convention to codify existing space law.

Prof. Maurice N. Andern (Finland), presented the paper "*The 1967 Outer*

Space Treaty (1967 OST) as the Magna Charta of Contemporary Space Law: A Brief Reflection". He emphasis on the important of the Outer Space Treaty as the Magna Carta of contemporary space law and proposed that COPUOS Should adopt procedural rules for the implementation of its provisions by all UN Members states.

With the paper "*Previewing a Series of Potentially Cataclysmic Events.*" Dr. E. E. Weeks analyzed seven events which are problem of potential world conflict in outer space and recommend that IISL and COPUOS should consider the international rules concerning space tourism, space mining and space settlement and to what extent are private property rights permitted or prohibited in accordance with the wishes of the international community?

The paper "*Supranational or Stateless Incorporation for Space Traffic Management and Control*" was presented by Mr. William O. Glascoe III (USA). He commented that as a result of the growing success of space transportation there will be a need to establish supranational corporation for space traffic control and a regulatory paradigm of stateless authority for space traffic control must be created.

Discussion:

Mr. Mayence stated that it is very difficult to achieve an acceptable general Convention on Space Law in a short time.

Ms. Viikari held that international treaty development is too slow. She suggested other mechanisms such as interim agreements, non-binding codes of conduct. "supranationally" adopted

technical standards, and self-correcting treaties.

Mr. Weidaw argued that a new general convention on space law must re-examine and determine private business right of ownership.

Ms. Deirdre Ni Chearbhaill said that the Moon Agreement should be included in the general convention on space law, so that human activities on the Moon can develop within a solid legal framework and the space environment may be protected.

Prof. Andem raised the importance of the 1967 Outer space Treaty and in order to enhance its effectiveness, he submitted that there is an urgent necessity for COPUOS to adopt procedural rules for the implementation of OST provisions by all UN Member States.

Ms. Weeks stated that COPUOS must place on its agenda, space tourism, space mining and space settlement and private property rights and specify to what extent these activities are permitted under existing international space law.

D) SESSION 4 - LEGAL ISSUES RELATING TO PRIVATE ENTERPRISE, PROPERTY RIGHTS AND SPACE APPLICATIONS

Chairmen: Dr. Sylvia Ospina, Colombia and Prof. Sergio Marchisio, Italy
Rapporteur: Mr Kenneth Weidaw, USA

Paul B. Larsen, Moon and Mars Exploration and Use.

The paper examines the legal basis for the United States announcement by President Bush of the Moon and Mars exploration initiative. Cooperation between the U.S. and Europe has been difficult. However, such cooperation is

crucial to current space initiatives. He recommends that careful international coordination and cooperation occur for most new outer space enterprises.

J. Triplett Mackintosh and Lizbeth C. Rodriguez, General discord and Bar Harmony: U.S. Export Controls in Space.

The paper provides an introduction to U.S. export regulatory controls and their application to the space and aerospace industries. A broad array of technologies are subject to regulation. Exports of some technologies require a license from the Department of State. Most exports of space and aerospace technology will require export authorization. If trading occurs with prohibited parties, there are criminal and administrative penalties. The paper advises what actions may be taken in the event of a violation - providing a step-by-step approach. National security is at the core of the regulations and the consequences of failing to comply may be costly.

Prof. Dr. Stephan Hobe and Jurgen Cloppenburg, Towards A New Aerospace Convention? - Selected Legal Issues of "Space Tourism"

The paper clarifies to which extent existing instruments of private international air law may apply to "space tourism." The authors argue that the applicability of international space law to "space tourists" must be analysed and amendments to existing law should be considered. Clear rules are required, as in an environment of legal uncertainty the industry is not likely to develop. Issues of passenger liability will likely be of highest importance.

Zeldine O'Brien, Liability For Injury, Loss or Damage to the Space Tourist.

With the potential for growth in the space tourism industry, concerns regarding the state of the law governing the liability for possible damage, loss or injury to tourists increase. The author believes that a legal regime governing liability of carriers and others for loss, injury to space tourists should be established. Such need has previously been recognized by other authors. A legal regime would be best established through a U.N. convention on carrier liability. The author believes the new convention should roughly follow the Montreal Convention with a two tier system of liability, a review clause and a similar range of applicability.

Tanja L. Masson-Zwaan, A Practical Application of Egnos and Galileo: The Advantis Project.

This paper describes the "ADvantis Project"- the first contract awarded in February 2004 by the Galileo Joint Undertaking, established by ESA and the EC to manage Europe's global satellite navigation system, Galileo, to a consortium of ten European companies. The author explains two key concepts of the system, namely, data concentration and ADvantis Integrity. It is noted that the 25 EU Member States need to harmonize their national laws for the system to effectively operate in a harmonious regulatory environment.

Jakub Ryzenko, Explorers, Merchants and Envoys of Mankind.

This paper focuses on challenges directly created by extensive operations beyond low earth orbit. He then discusses the use of in situ lunar resources and exploration of Mars in the search for living organisms. He notes that attitudes and interests towards space exploration divide states into three

distinct groups - 1. Space-exploring nations; 2. Emerging space powers and potential exploration players and; 3. Other states. The issues discussed in the paper encourage the role and value of international cooperation. As the number of states involved with space exploration increases, more states will come to embrace space exploration - with a feeling of "ownership" which will minimize opposition and, thus, will limit possible conflicts of national interest.

Mahulena Hofmann, Recent Plans To Exploit the Moon Resources Under International Law.

The future exploitation of lunar resources is the subject of this paper. Lunar resources may be exploited according to the Outer Space Treaty so long as appropriation of the exploited areas does not occur. Concern is expressed in light of President Bush's January 2004 speech in which he stated that lunar resources will be exploited in the future. Since the Moon Treaty was not signed by the U.S., only customary international law provides guidance. The author recommends that a regime be established to guide all parties in their plans to exploit lunar resources to be assured that they are in compliance with international law.

Wayne White, Nemitz vs. U.S., The First Real Property Case in United States Courts.

In 2003, U.S. citizen Gregory Nemitz registered a claim to Asteroid 433. After NASA landed a spacecraft on the asteroid, Eros, Nemitz invoiced NASA for parking and storage charges. After the claim was rejected, Nemitz filed suit against NASA and the Department of State in the federal court. The suit was dismissed for failure to state a claim. An

appeal was then filed and is now pending. The paper describes and summarized the principal issues and arguments set forth in the pleadings and briefs of the parties. The issue of property rights commands attention now, according to the author. The author further believes that Nemitz has performed a valuable service for the U.S. in that he has forced the government to critically analyze the domestic law regarding property rights in outer space. The author believes the court should decide - private entities in the U.S. cannot claim private property rights of any sort in the absence of national legislation. Governments need to address the issue of property rights in their national legislation.

Ricky J. Lee, Transferring Registration of Space Objects: The Interpretative Solution.

In recent years it has been observed that the legal principles concerning the registration of space objects present a hindrance to some commercial transactions involving satellites. Specifically, the requirement that the State of registry has to be a launching State of the space object appears to prevent the effective commercial transfer of title in satellites. The paper discusses three means by which the effects of registration of a space object by a non-launching state may be achieved lawfully without the need to amend the Outer Space Treaty or the Registration Convention. Although amendment of the treaty or convention is preferred, the three means provide an interim solution to the dilemma.

Sreejith S.G., "When Sputnik Orbits Geneva": Legal Reflections on WTO

Governance In Respect of Commercial Space Activities.

The author believes that World Trade Organization jurisprudence is applicable to space commerce; WTO law is a source of space law. When space law recognizes WTO law as a source, it will become broader in scope. The author believes that the GATT duties and numerous other enforcement procedures may not be of benefit to space law although it will have to deal with them in any event. However, the author cautions against allowing the WTO enforcement mechanism to dictate space industry decisions due to potential overreaching by WTO.

Prof. Dr. Maureen Williams, Dilemmas of Remote Sensing Data in National and International Courts.

The paper summarizes remote sensing activities and addresses issues such as distribution and commercialization of the data obtained by remote sensing technologies and their use. Specific problems arising from the use of data collected by earth observation satellites and its value before the courts is also considered. Digital maps have been used as evidence in litigation. An expert witness is required during trial to interpret the maps. The expert is allowed a wide margin in interpreting the digital maps. Judges or arbitrators must rely upon such testimony - the author considers this to be a source of trouble as evidenced by a recent case outlined in her paper.

Luis F. Castillo, Legal Issues Relating to Private Enterprise, Property Rights, and Space Applications.

The primary objective of the paper is to describe the mechanisms available to states and international organizations

and corporations for dispute settlement. The author believes that the 1998 Final Draft of the Revised Convention adopted by the International Law Association of the original 1984 Convention adopted in Paris contains provisions that are current with the times, especially considering commercial space law developments. It is recommended that a specific tribunal be established to hear and render binding and non-binding decisions in disputes dealing with commercial space activities. The paper then presents a Declaration of Principles In Relation To Dispute Settlement In Commercial Space Activities.

Virgiliu Pop, Extraterrestrial Real Estate: Debunking the Myth.

The subject of the paper deals with the illegality of Dennis Hope, through his "Lunar Embassy," selling real estate on the Moon. The paper sets forth the specific reasons why the Lunar Embassy does not own the Moon, and, thus, cannot legally sell portions of it. With the advent of the internet, the illegal claims of the Lunar Embassy have been widespread and the public believes it could actually own a portion of the Moon. The author contends that lunar ownership claims are not only misleading but are false and the sale of real estate is fraudulent activity. Reference is made to the recent (2004) proclamation by the IISL Board of Directors stating that private ownership is forbidden under international law, specifically, the Outer Space Treaty of 1967.

E) SESSION 5 - Other legal matters, telecommunications, NPS and military implications.

Chairmen: Dr. Kai-Uwe Schrogl (Germany) and Dr. Lucy Stojak (Canada)
Rapporteur: Martha Mejia-Kaiser (Mexico)

Prof. Francis Lyall (UK) presented the paper *"The Protection of the Public Interest in the Light of the Commercialization and Privatization of the Providers of International Satellite Telecommunications"*. He reviewed the current trend in the privatized INMARSAT and INTELSAT organizations. He stated that there is a threat to the original aims of both institutions to serve international public interest. Prof. Lyall fears that adventure capitalists may overtake these organizations, who may put aside the public interest to the detriment of underdeveloped countries. He proposed to convert the International Mobile Satellite Organization to a general monitor of compliance with public service obligations.

The paper *"Digital Divide"* was presented by *Ms. Delphine Gomes de Sousa* (France). She commented that the gap between persons who "have" or "have not" access to information and communication technologies is a new form of inequality. She pointed out that this inequality is a result of terrestrial technologies being fixed to a certain area and of the commercial motives of the operators. She proposed to correct this gap through the establishment of wireless technology through a global broadband satellite infrastructure.

Mr. Sethu Nandakumar (India-UK) presented the paper *"Legal Impasse-Commercialization of Space through Reusable Sub-Orbital Launchers"*.

Although there is no legal definition of space object, Mr. Nandakumar noted that the international community has accepted that they require at least one completed orbit around the Earth. Although sub-orbital flights may reach an altitude higher than 100 km, and may cross the orbits of some satellites, they describe a parabolic path, therefore can not be considered as space objects. At the present such flights are in the test phase and subject to domestic air law (in US), but some international legal issues will arise with the commercialization of these flights, for example the status of passengers, remote sensing activities while ascending and descending, liability aspects in case of an accident, etc. He stressed that there is a need to create a new legal regime and to establish an international organization for the coordination of these activities.

With the paper *"Civil Liability in Space at Common Law"*, *Mr. Dermont Sheehan* (LL.B. student in Ireland) presented some hypothetical examples on space liability and examined them under the existing common law. He proposed to apply maritime law (admiralty law) - with modifications - to outer space activities and to develop specific space torts. He concluded that private disputes in outer space should be solved at private level and not at governmental level.

In the paper *"High Altitude Platforms and International Space Law"*, *Prof. Peter Haanappel* (Netherlands) analyzed the legal aspects of High Altitude Platforms which may be large stationary bodies, deployed between 30 and 50 km. altitude. Although such devices may use radio communication services allocated for outer space services, he commented

that they are governed by (international) air law. Prof. Haanappel asserted that it is necessary to consider the interrelationships between the laws of air space and outer space, because the High Altitude Platforms may obstruct the access of space objects to outer space in the ascent or descent phase of space, thereby creating liability issues in case of an accident.

Dr. Carl Christol (US) presented the paper *"Gathering and Dissemination of Space-Based Data in Time of Armed Conflict"*. The author commented that at present, satellite remote sensing data collected by military agencies and private commercial companies are used in various ways in the war against terrorism and in the recent Iraqi wars. Prof. Christol reviewed the coordination of US governmental institutions and private satellite remote sensing companies in the areas of data acquisition, data analysis and immediate transmission to the war theater. Based on the legal viewpoint that States have the sovereign right to protect themselves against warlike adversaries, he affirmed that remote sensing satellites contribute to a more benign phase of international relations.

Mr. Sa'id Mosteshar (UK) presented the paper *"Militaryization of Outer Space. Legality and Implications for the Future of Space Law"*. In his paper, Mr. Mosteshar analyzed the term "peaceful use" and concluded that it should mean "non-military" rather than "non-aggressive". He referred to the Bush foreign policy which is directed to "...dominate the space dimension of military operations to protect US interests and investments...denying other countries access to space". He is of the

opinion that any military use of outer space weakens international law of outer space.

Philippe Achilleas presented the summary of the paper written by Ms. *Yuri Takaya* (Japan) named *"The Usage of Space Weapons and International Law"*. Ms. Takaya reviewed the applicable international law to prevent the deployment of space weapons. She referred to the planned deployment of "interceptors" in outer space. Because such devices do not fall under the scope of the definition of weapons, as defined in the OST and the Moon Agreement, she commented that it is necessary to establish appropriate measures to prevent their deployment in outer space.

General discussion:

About the flight of Space Ship One and the legal implications of sub-orbital flights:

In respect to the status of sub-orbital tourists, Dr. van Fenema remarked that the Astronauts Agreement addresses the assistance to astronauts in case of accident and danger and that this treatment should also apply to sub-orbital tourists. However, he questioned if the status of "envoys of mankind" apply also to sub-orbital tourists.

About militarization and weaponization of outer space:

Mr. Salin commented that the legality of the "legitimate defense" argument in outer space must be analyzed. He stressed that the US uses this argument to impose there will without taking into account the rest of the international community. He commented that there is

a link between militarization and commercialization in order to anchor investors through shares and bonds.

Mr. Mosteshar indicated that in pursuing its policy, the US is undermining its peaceful commitments and international law.

Dr. Stojak referred to statements of the US secretary of Defense, Donald Rumsfeld, which reflect the US policy of avoiding signing cooperation agreements, in order to have freedom in their non-pacific endeavors.

About the delimitation of air and outer space and an international space convention:

Dr. von der Dunk observed that although the 100 km. limit was set as the goal for the X-prize, it may be necessary to go back to discussion of setting a limit between air and outer space, in order to have clarity which law applies to a certain segment of flight. He remarked that Australia is the first country having established the limit between air and outer space at 100 km by national law. He regarded this a good sign and pointed out that other more complex national legislations, as for example the US space legislation, have not yet gone so far.

Mr. Salin disagreed and was of the opinion that air space and outer space should be considered as a continuum. The setting of a formal delimitation would not solve the problem.

Dr. Schrogl informed that presently the United Nations prepare a draft resolution on the application of the legal principles of the launching State. This draft contains a recommendation to encourage

implementation of national space legislations. Such topic may be an issue in the next meeting of the COPUOS legal subcommittee, where drafts models may be developed.

Dr. van Fenema added that discussions on a possible international space law convention show again the two contrary positions: countries who wish to set a limit between air and outer space, and countries, like US, who are reluctant to accept new rules which may limit their space activities. Before starting the discussion on a new international space law convention, he emphasized to identify the aspects which are not covered by the five existing space treaties. Subsequently, this would lead to the question, if national governments can be entrusted with establishing such rules at the national level in such a way to comply with the existing space law treaties.

Dr. Freeland pointed out that the 100 km delimitations set by the Australian government was done for practical reasons. The government wanted to define if an object launched from its territory could reach this limit. The establishment of this limit was not intended to put Australia into the role of a pioneer concerning this delimitation.

Dr. Schrogl commented that countries like France, Germany and Netherlands must sit together with countries that already have national space legislations like the UK and Sweden, in order to draft national legislations which are harmonic at the European level. This may be the same in COPUOS, because some countries appreciate if they get some inputs on space law matters, not

only from other countries but also from the IISL.

On the creation of an international space convention, Dr. Ram Jakhu was of the opinion that such convention should also contain new aspects not contained in the 5 existing treaties, for example, property rights and liability issues. Another aspect is who should be drafting this convention. COPUOS may be the obvious forum for such issues, but in this context also the militarization and weaponization of outer space will be addressed. Therefore some delegates of countries who interpret "peaceful" uses as "non-aggressive" uses will evoke the argument that COPUOS is restricted to discuss the peaceful uses of outer space only.