

REPORT OF THE 50th COLLOQUIUM ON THE LAW OF OUTER SPACE HYDERABAD, INDIA SEPTEMBER 2007

Contributed by Rapporteurs V. Gopala Krishnan (India), Martha Mejia-Kaiser (Mexico),
and Ranjana Kaul (India)

Compiled and edited by Tanja Masson-Zwaan

SESSION E6.1 - THE IMPACT OF OUTER SPACE LAW ON REGIONAL POLICIES

Chairman: Prof. Paul Larsen (USA)

Rapporteur : V. Gopala Krishnan (India)

In his paper on the **Asia-Pacific Space Cooperation Organization Convention**, **Prof. Haifeng Zhao (China)** gave a brief overview of the APSCO Convention (Asia-Pacific Space Cooperation Organization), starting from its entry into force in 2006. Through his presentation Prof. Zhao analyzed the cooperation that exists between the different Asian States in terms of Space Cooperation, the further efforts that needed to be taken to benefit the Asia – Pacific Region, the History of the Convention and the scope and potential benefits it holds out to the other Asian Countries to embrace the Space Age. In doing so, Prof. Zhao took a detailed look at the various organs of the APSCO, its policies, objectives and dispute settlement mechanisms, financial arrangements of the organization. The paper concluded on a hopeful note that it is time to have an Asian Space agency, because of the severe competition that Asian Countries have started offering the developed countries. It can serve as a platform to represent the unified interests of the Asian Community much like the European Space Agency.

Lunar Exploration – The Road Ahead was written by **Dr. Rajeev Lochan** and **Mr. V. Gopalakrishnan (India)** and presented by the co-author, Mr. V. Gopalakrishnan. Authors took a very critical look at the Moon Treaty and arrived at the conclusion that the Moon Treaty requires re- engineering and a plea was made for countries to add their voices to the

demand to review the moon treaty. In doing this he traced the evolution of both the scientific and legal developments in this field. Starting with the first missions to the moon and the legal and political consequences that followed from each space mission, the presentation linked this with the subsequent drafting of the provisions of the moon treaty and the political tussle between the then two super powers that played a large role in its drafting. The authors argued that the many criticisms leveled against the provisions of the treaty are more a work of exaggeration than actual substantial claims. In saying this, the authors re- examined these provisions and concluded that the original intent of the drafters of the treaty has not been the interpretation that most space- faring nations have chosen to take and hence the need to re-examine the treaty was reinterared.

From Asian Politics to Astropolitics: The History and Future Shape of Asian Space Policy was the title of the paper by **Mr. Scott Shackelford (USA)**. A summary of this paper was presented by Ms. Tanja Masson-Zwaan. The author emphasized the fact that space technology is the only solution for achieving sustainable development of nations. While quoting the fact that every nation is considering their space programme as a source of pride and prestige and also an element of foreign relations, he put up a case that space cooperation among nations is a viable solution towards international solidarity and development. Mr. Shackelford expressed his concern that Asian countries like China, Japan and India pursue their space programmes with individualized goals. It was hinted that through cooperation, these countries could achieve still better. The author suggested the Asian Countries to adopt the model that is followed

by NASA in space exploration, one of collaboration and mutual learning.

The Role of European Regions in the EU Space Policy was the title of the paper written by **Dr. Marianna Morelli** and **Dr. Pierpaolo Campostrini (Italy)**. Dr. Morelli dwelled upon the EU Space policy and quoted that the Space Policy White Paper, 2003 called for the need that space should become a shared competence between the Union and its Member States. It was argued that despite the different areas of competence and the different functions granted to the regional entities, most European Regional Governments deal with a number of issues in areas linked to environment, emergency and security, agricultural and fishery management, air quality monitoring, integrated management of coastal areas as well as the economic development and the promotion of innovation systems. Because of these various common goals, the European Regional Authorities launched the idea of a permanent Conference of European Regions using Space Technologies. The speaker traced the evolution of space cooperation in Europe, which finally led to the joint efforts in establishing GALILEO and GMES. The speaker argued that the aim of this framework is to address the coherent and progressive development of an overall space policy able “to link demand for services and applications using space systems in support of the community policies with the supply of space systems and infrastructure to meet the demand” The speaker concluded his paper stating that the network is on the verge of becoming a reality and to ensure its sustained success the cooperation and backing of the various governments and the European Union will be required.

Ms. Antonella Bini (Italy) presented her paper on **Export Control of Space Items in Europe: Legal and Political Constraints**. Dr. Bini argued that the current export control frame work in the United States is under heavy stress because of the major security concerns post 9/11. Against this backdrop, European firms have an opportunity to increase their presence on the Global Market Place of Commercial Space. For this, the author

believed a well structured export control policy supported by an effective legal regime is necessary. The speaker also established the effectiveness of the existing Export Control measures despite the vast differences in export control policies of European nations such as France, England, Germany and Switzerland; the formulation of different categories that distinguish between those types of weapons that would perpetuate proliferation and those that would help enhance the technological capabilities of other countries without compromising the national interest of the European countries has helped lay a strong foundation on which to build a homogenous policy. Dr. Bini concluded by stating that the one way to bring about a harmonized export control regime and do away with the political discord between the member states of the EU would be to create binding legal instruments that would sort out the issues. Hence, before the European firms surpass their American counterparts in terms of market access and market recognition, a framework governing all parties’ interest needs to be formulated, one that protects national interests and at the same time allows European firms to compete on a global basis.

Dr. Annette Froehlich wrote about **Cooperation of ESA and EU Considering the Current Challenges During Implementation of Common Projects**. Dr. Goh presented the summary of this paper. Using the existing cooperative frameworks, the European Space Agency and the European Union, the author analyzed these institutional mechanisms and the scope they offer for the future of space development. Tracing the various attempts at cooperation between ESA and the EU, the author in concise terms describes the Graz dialog of 2006, the Munich Road Map of 2007 and the 4th Space Council resolution on Space Policy. Though these attempts at cooperation are noteworthy, Dr. Froehlich argued that the existing institutional mechanisms fall short of providing a cogent means of addressing financial, political and legal concerns. She backs this up by showcasing the problems and challenges that the member countries faced in implementing GALILEO and GMES. In her conclusion,

though praising the ESA- EU framework, she still felt there are a lot of loopholes that need to be plugged and also the concerns of Europe's Space partners – China, India and Japan are of utmost importance and any framework drafted must take those into account.

The EU INSPIRE Directive: A Suitable Mechanism to make Spatial Data more Available? was written by **Prof. Dr. Lesley Jane Smith and Catherine Doldirina (Germany)**. Dr. Smith highlighted the significance of spatial information in the decision making process and hence stressed the importance of access to such information and the compatibility of information storage systems. This importance is further highlighted by the 2007 directive of the European Parliament and the Council establishing an Infrastructure for Spatial Information in the European Community (INSPIRE). This Directive is geared towards merging and stream lining policy – relevant spatial data and information. The paper analyzes the various provisions and regulatory regime of the Directive. The main focus is on interoperability as seen in Article 11, 13, 14, 15 and 17. Dr. Smith opined that the directive in no way aims to regulate the intellectual property rights regime applicable to data sets, information and services that will become available once the infrastructure is established; this is because the Directive has no influence on the existence or ownership of public authorities' intellectual property rights. The speaker concluded saying that at this point in time nothing about the interpretation of the Directive is set in stone, because the framework will come into effect only in the year 2009 and the first implementation reports are due only in 2010. It is these implementation reports that will tell the world and the European Community whether IPR and charges for the services provided in the framework of INSPIRE can be solved in practice.

Dr. Alvaro Fabricio dos Santos and Dr. Jose Monserrat Filho co-authored the paper **Toward a National Brazilian Center on Space Policy and Law Studies**. Unlike the other papers that focus on the need for

cooperation between different regional blocks to ensure maximum benefit in the commercialization of space and leverage on the world political platform, the main focus of Dr. Filho's presentation was to enhance the development and interest in the study of space law and how a Brazilian Center on Space Policy and Law Studies would ensure the fulfillment of that goal. Dr. Filho introduced the topic by talking about the lack of qualified professionals to teach the subject and the failure of academic institutions to take an interest in the subject. He argued that all of this has led to a sizeable portion of Latin American and Caribbean youths' ignorance of the subject. Dr. Filho listed the possible benefits that would accrue from establishing such a center, and their paper is a possible lesson for nations like India and other Asian Countries of the need to enhance awareness amongst the public about the doors that could open with exposure to the field of Space law and Space Science.

ASEAN Space Cooperation was the topic of a paper by **Mr. Chukeat Noichim (Thailand)**. A summary of this paper was presented by Dr. von der Dunk. In consonance with the theme of the Colloquium, Mr. Noichim's paper on ASEAN Cooperation highlighted the many changes in the Space industry since its inception in the early 60's. The growing industrialization, and space's growing importance and its role in help facilitating the goal of Sustainable Development for all are some of the reasons why he advocates regional Space Cooperation. The author sees regional Space Cooperation as a means to help oneself by helping others. He emphasized this point by saying that regional space cooperation would assure equal rights to space benefits, cooperation would not limit returns only to the first beneficiary or the first user but the totality of space benefits would be spread to other cooperating countries equally. Like Prof. Zhao, he advocated the setting up of a regional Space Agency, the ASEAN Space Organization (ASO) to help achieve regional cooperation and equitable distribution of benefits.

Studies on National Space Laws and Policies in Asia Pacific Region was written by Mr.

Mehmood Pracha. A summary was presented by Dr. von der Dunk. A study was made on the space laws vs space programmes of the countries in the Asia Pacific Region. It was highlighted that some countries, like the Russian Federation, Japan, India, and China have very advanced space programmes, while many others are in the nascent stage. Some countries, like the Russian Federation, Japan, Australia etc., have very detailed space laws, whereas others like India, or South Korea do not have such space laws even though they pursue very effective space programmes. The provisos of the Outer Space Treaty which emphasize the international responsibilities and rights of a state on outer space activities and space objects (Articles VI, VII, VIII), were quoted to establish the need for an effective space law for a space-faring nation. The author also recalled the recommendations of various workshops held in the Hague (2002), Brazil (2004), Abuja (2005), Kyiv (2006) under the auspices of UNCOPUOS, wherein the need for the establishment of space legislation for states involved in space activities have been articulated. The salient features of the space legislations / legal regime for space activities of various countries in the Asia Pacific Region, such as Thailand, Pakistan, Bangladesh, Indonesia, Malaysia, Mongolia, South Korea, Taiwan, Iran, Singapore, North Korea, the Russian Federation, Australia, China, Japan, and Hong Kong were detailed.

SESSION E6.2 - LEGAL ISSUES OF PRIVATE SPACEFLIGHT AND SPACE TOURISM

Chairmen: MYS Prasad (India) and Dr. Frans von der Dunk

Rapporteur: Mehmood Pracha (India): *No report submitted by rapporteur.*

Hereunder follow reports of some papers that were presented in other sessions.

a) papers presented during session E.6.3, reported by Martha Mejia-Kaiser:

The first paper presented in this session was **'Passengers Should Not Fly at their Own Risk but at Some Risk'** by **Ms. Lydia Boureghda (France)**. Ms. Boureghda commented that the growing interest and participation of space tourists require the discussion of passenger's liability. Ms Boureghda referred to the US legislation that allows space passengers to fly at their own risk. She stressed that an international text or guidelines should be drafted to regulate space tourist's liability.

The second paper presented was **'Duties and Liabilities of Space Tourist Operators'** authored by **Ms. Zeldine O'Brien (Ireland)**. Ms. O'Brien presented the European Union Directive 90/314/EEC on tour operators and ventured to apply this Directive for space tourism. The author commented that space tours to be offered by European tour organizers and travel agents may come within the directive's 'holiday package' definition. Ms. O'Brien examined the holiday package elements, such as pre-arranged, inclusive, transport, and accommodation and addressed tour organizers' obligations (pre-departure obligations, financial obligations, liability for damage, etc.) Ms. O'Brien also addressed compensation for non-material injury, such as loss of enjoyment and disappointment.

The following paper presented was **'Criminal and Disciplinary Issues Pertaining to Suborbital Space Tourism Flights'** by **Mr. M. Chatzipanagiotis (Greece)**. In the search of applicable law elements to criminal and disciplinary acts in suborbital flights, Mr. Chatzipanagiotis reviewed several legal instruments of air law. The author also presented existing legislations applicable to crimes and disciplinary issues in space travel (e.g. US legislation for Space Shuttle, ISS, Russian Federation legislation). He concluded that a new uniform penal and disciplinary legal regime directed to suborbital vehicles is necessary and commented that national legislations should first be enacted where the jurisdiction on the vehicle is set and where the commander is vested with disciplinary powers. Such legislation should include security measures to be taken by operators.

Dr. Ishwara Bhat and Mr. Sandeepa Bhat (India) presented the paper ‘**UNIDROIT System of Asset-Based Financing for Space Activities-Need to Plug the Loopholes**’. The authors presented the results of UNIDROIT’s efforts to unify domestic finance laws through a base Convention and a Space Protocol, yet to enter into force. Both authors considered that these instruments have loopholes and suggested changes. One proposal was to reconsider some provisions of the space treaties (e.g. jurisdiction and control over space objects). The authors also proposed the introduction of provisions to make creditors free from the mercy of debtor’s state to obtain a license and the right of creditors to protect the collateral (e.g. a satellite) from being damaged by the debtor.

b) papers presented during session E.6.5, reported by Ranjana Kaul :

A Code of Conduct for military activities in outer space was written by **Prof. Paul B Larsen (USA)**. Professor Larsen argues that even though there is a considerable body of international law governing military uses of outer space, it is necessary to evolve a set of guidelines to curb its weaponization. The author suggested that the guideline proposed by the Stimpson Centre, Washington D.C, could be applied to military uses of outer space. These guidelines would include among others, prohibition on ASAT tests; establishment of safety zones and special caution zones; communication and free flow of information between states; and peaceful dispute resolution.

A survey of Colombia’s New Outer Space Policy: reforms in Colombian Law, authored by **Mr. Jairo Becerra O. (Colombia)** was summarised by Dr. Martha Kaiser. The paper suggests certain changes that the Colombian government needs to make in its existing legislation, including in the Colombian Constitution, in order to provide a solid basis for its new outer space policy in consonance with international law.

SESSION E6.3 - NEW LEGAL DEVELOPMENTS IN THE PROTECTION OF THE SPACE ENVIRONMENT

Chairmen: Prof. V.S. Mani (India), Dr. Kai-Uwe Schrogl (Germany)

Rapporteur: Ms. Martha Mejia-Kaiser (Mexico).

Dr. Schrogl made some introductory remarks pointing out that two recent activities made this session extremely timely: the Chinese Anti-satellite test of January 2007 and the adoption of the space debris guidelines by UNCOPUOS in June of this year. The Chinese anti-satellite test had resulted in an increase by 2000 track-able pieces of the debris cloud around our planet and has put even more pressure on establishing an efficient regulatory framework for the mitigation of space debris. He expressed the wish that this session could serve as a forum for new ideas in this field.

The paper **Rules Regarding Space Debris: Preventing a Tragedy of the Commons** by **Ms. Kelly Gable (USA)** discussed the duty to mitigate space debris. Ms. Gable sustained that such duty has already transformed into a customary international rule, as both of its elements are fulfilled (*opinio iuris* and state practice). As part of *opinio iuris* Ms. Gable mentioned the UN Space Debris Mitigation Guidelines (approved by 67 member States) and the UN General Assembly resolution 60/99 (2005). As evidence of state practice, the author addressed the act of voting in favor of such resolutions in the UN, adhering to the IADC Space Debris Mitigation Guidelines and enacting domestic legislation or policies (US and China). The author concluded that the widespread voluntary participation to mitigate space debris will suffice to prevent the tragedy of the commons of outer space.

The paper **Applicability of Space Debris Mitigation Guidelines** was authored by **Mr. Luciano Belviso (Italy)**. Mr. Belviso commented that it is necessary to keep most widely used orbits (LEO and GEO) free of

space debris. The author referred to several features and operational procedures to protect operational spacecrafts and valuable orbits, but he considered that such technical countermeasures have a financial impact. Mr. Belviso commented that as there is a lack of consensus to conclude an international legal binding instrument to mitigate space debris and the IADC Mitigation Guidelines are of non-binding character, a solution not based on a treaty must be considered. He proposed the voluntary adherence to the IADC Guidelines, to adopt new regulations in the framework of the ITU or to create legal instruments on a regional basis.

Mr. Sethu Nandakumar Menon and Mr. Gopala Krishnan (India) authored the paper **State Responsibility and Need of International Legal Consensus for Debris-Free Environment**. The authors referred to the increasing space debris and its danger to space objects and valuable orbits. The authors asserted that space faring nations are liable for damage caused to the outer space environment. In order to protect the outer space environment, the authors proposed to set a legal definition of space debris and to establish space debris identification mechanisms to attach liability to the State of nationality, in case of damages to operational spacecrafts.

Dr. Martha Mejia-Kaiser (Mexico) presented the paper **Removal of Non-Functional Space Objects without Prior Consent**. Dr. Mejia addressed the mechanisms of the maritime salvage industry to remove shipwrecks from valuable maritime traffic lanes. She commented that salvage space operations to rescue valuable space assets are very likely to evolve into removal of space debris to disposal orbits. Dr. Mejia proposed: 1) that States mandate removal insurance to space objects owners; 2) that States authorize an international technical institute for the determination of hazards of a particular space debris item, for the identification of nationality of space debris (using current space survey systems) and for the communication to the State of nationality that the hazard requires to be removed before a deadline. If the owner or the State of nationality does not comply with

the mechanisms, third States may perform the removal without prior consent and may recover removal costs from space debris owners or their insurance.

With the paper **Common but Differentiated Responsibility-a Principle to Maintain Space Environment with respect to Space Debris**, **Dr. M. Prasad and the late Dr. Rajeev Lochan (India)** submitted an innovative mechanism to mitigate space debris. They contended that the space faring nations are responsible for the present space debris cloud around our planet. Taking the UN Convention on Climate Change and the Kyoto Protocol as a model, the authors proposed: 1) to apply launch quota mechanisms to States performing launching activities, linked to their past generation of space debris; 2) to reward States with 'debris credits' if they implement measures to mitigate space debris; 3) to establish a system that enables States that have committed to carry a large number of launches to purchase 'debris credits' from other countries; 4) to establish a Trust Fund, as part of a liability regime, to compensate victims for damages due to space debris (contributions to be fixed according to past space debris generation); 5) to grant special treatment to States that share knowledge and technology for space debris mitigation. Such a proposal was already presented by the Indian delegation to the COPUOS meeting of 2002.

Prof. Saligram Bhatt (India) presented the paper **Space Law and Nature Conservation** by which he referred to the biologist and ecological global movements and their interaction with Space Law for peace, welfare of humankind and the removal of global poverty.

Dr. Mahulena Hofmann (Czech Rep.) presented the paper **Is there any Legal Regime for the Protection of the Moon's Environment?** After revising the Outer Space Treaty and the Moon Treaty and their *travaux preparatoires*, Dr. Hofmann commented that there is no international binding instrument that prevents biological, nuclear, chemical or space debris contamination on the Moon or its orbits. She commented that the COSPAR

Planetary Protection Policy of 2002 (2005) is of non-binding nature. With the present increasing interests to return to the Moon, Dr. Hofmann urged to collect existing binding and non-binding standards in order to create a legal body to protect the Moon and to identify areas that should be internationally protected.

Mr. Kevin Comer (USA) authored the paper **Towards a Provisional System for Private Property Rights on the Moon that both Encourages Commerce and Protects the Environment**. Mr. Comer considered that the non-universal acceptance of the Moon treaty and the present serious considerations for exploring and exploiting the Moon, call for the establishment of a new legal system. In order to exploit Moon resources and to protect its environment Mr. Comer presented several models. He considered that the best alternative could be based on the concept of Individual Transferable Quotas, which permit a limited exploration and exploitation, allowing private companies to obtain profit. The author envisaged the creation of an authority that will be in charge to determine the quotas. In a slow pace, the scientific community may observe the environmental impact on the Moon.

The last paper was **Sustainable Space Development-Need for a Change in the Liability Regime** by **Sandeepa Bhat (India)**. Mr. Bhat indicated that launching States can not be subject to liability for damage to the outer space environment, because no space law instrument explicitly includes such damage. He proposed to rethink the liability concept, searching for a balance between the rights and needs of the present generation to utilize the resources, without affecting the rights and needs of the future generation.

SESSION E6.4 - LEGAL ASPECTS OF SATELLITE APPLICATIONS: NAVIGATION AND REMOTE SENSING
Chairman: Prof. G Catalano Sgrosso (Italy)

Rapporteur: Suresh Kibe (India):

No report submitted by rapporteur

SESSION E6.5 - THE 40TH ANNIVERSARY OF THE OUTER SPACE TREATY, AND OTHER LEGAL MATTERS

Chairman: Prof. Ram Jakhu (Canada)

Rapporteur: Ms. Ranjana Kaul (India)

The Outer Space Treaty: 1967-2007 was written by **Prof. Jonathan Galloway (USA)**. The paper is an interdisciplinary interpretation of the forces of history that have impacted space law as contained in the 1967 Outer Space Treaty. It was contended that human activity in outer space has been impacted by developments in science and technology, by political parameters, economics, military maneuvering and ethical philosophies. Thus the object of the analysis was to find a possible way forward that will enable us to meet the challenges and opportunities of our times within the framework of the Outer Space Treaty. The principles of free exploration; scientific cooperation and of non appropriation are a point in case. Alongside political and military considerations are ethical philosophies which are related to different schools of economics. The author suggested that law itself can be a force of history and that although the promises of the 1967 Outer Space Treaty remained unfulfilled, the space law community can be optimistic about the peaceful purpose and uses despite the challenge of an arms race in space.

In her paper **An Interpretation of Outer Space after 40 Years**, **Ms. Julia Neumann (Germany)** presented a detailed and an in-depth, theoretical, methodological and practical study of the interpretation of the most significant international agreement regarding outer space activities: the 1967 Outer Space Treaty (OST). The author presented a comprehensive commentary on the written norms of space legislation and related State practice. In so doing she has taken into account the general rules of interpretation of treaties of public international law as set out in Articles 31-33 of the Vienna Convention on the Law of Treaties as well as focused on the peculiarities in the interpretation of the OST. The paper

offered three approaches to interpreting the Treaty: *Objective* (which focuses on the actual text of the agreement); *Subjective* (which centres on the intention of the parties to the agreement); and *Teleological* (which emphasizes the object and purpose of the treaty against which the meaning of any particular treaty provision should be measured). The significance of the paper is that the author has analyzed the development of the interpretation matrix in context to State practice in regard to all the international treaties on outer space through the last forty years. The paper reiterates that despite the well known difficulties involved in interpreting the OST, it remains an "awesome document" which has remained practicable until today.

The paper by **Prof. F. Lyall (Scotland)** on **ITU in the Modern World: Fourteen Years from Reconstruction** was summarised by Prof. L.J. Smith. The paper discussed the further revisions and the changes brought about by the new ITU Constitution and Convention in particular context to outer space. Essentially the paper reviewed and commented on selected results of the 2006 ITU Plenipotentiary Conference. The paper highlighted changes and expansion of purpose in the following areas:

- (i) ITU Management; (ii) Structure, Council membership, timing of meetings and the RRB; (iii) Elected Officials; (iv) Membership Statistics; (v) Finances; (vi) Sector members; and (vii) Aid and Development.

The paper listed the significant changes and developments that have taken place under the new ITU system. Finally, the paper highlighted challenges thrown up by the growing use and development of Internet and the impact of privatization and globalization that ITU must deal with in the future. The author sounded the warning that the relentless speed and complexities of telecommunication development may fragment and detach various parts of the ITU resulting in managerial and other difficulties.

Dr. Patricia Sterns and Dr. Leslie Tennen (USA) wrote a paper about **Ethics and the Conquest of Space: From Peenemunde to Mars and Beyond**, which was summarised by Prof. Galloway. The authors dealt with the ethical concerns that have been voiced ever since the dawn of the space age when mankind entered outer space. From the fabrication and use of the Vengeance rockets in World War II, to the pollution and contamination of space and celestial bodies, ethical considerations can be raised in virtually every application of space activity. Admittedly although ethical concerns are an inseparable part of the jurisprudence of outer space, these questions have not been actively discussed in the same way as have legal elements therein. The paper identified and discussed some primary ethical issues presented by past, present and projected future activities of mankind in the use and exploration of outer space. The authors put their analysis in context to the international community and the question raised in the COMSET Policy Document, “*How can one define the risk of abuse of dominant position by space actors?*” In light of that question, the authors urged the audience to offer a response to the ethics of the historical antecedents of the secret and remote Nazi rocket technology research facility on the Baltic coast called Peenemunde where concentration camp prisoners were used in the rocket production facility in order to maintain secrecy. Consequently, because the ethics of the space age, that was founded on the back of rocket technology, has historical reference, the authors urged an analysis of the ethics of (i) the US Paperclip Project program to enable Nazi scientists to emigrate to America so that the Pentagon could use their expertise; and (ii) the Russian program of capture and recruitment of former Peenemunders in the Soviet Union.

Space Law and the Brave Blue World was written by **Prof. Jose Monserrat Filho (Brazil)**. Quoting Manfred Lachs that “It is from Earth that space objects begin their journey into outer space, from here they are controlled. Man’s journey into outer space begins on Earth and on Earth it comes to an end”, the Paper highlights the fact that while

international space law deals with space and human activity in space, it does not have a single element in it which requires “the looking after of the Earth”. Today there is urgent need to accept the high responsibility of protecting the Planet and even its survival. This challenge has been clearly underlined by recent reports prepared by United Nations Intergovernmental Panel on Climate Change (UNIPCC). The concern finds echo in decision of the 46th session of the Legal Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) to invite the International Institute of Space Law (IISL) and the European Centre of Space Law (ECSL) to organize a symposium on “Legal implications of space applications for global climate change” in the framework of its 47th session in 2008. More importantly, because the response of law has become an urgent necessity, the author urged that all means and instruments should be applied in a most creative manner to ensure a safer future for the “brave blue world” and its people.

Outer Space as the Province of all Mankind – an Assessment of 40 years of Development was written by **Prof. Stephan Hobe (Germany)**. The paper takes a critical look at the apparent contradiction between the principle of outer space as “the province of all mankind” in context to its use and exploration enshrined in Article 1 of the 1967 Outer Space Treaty, on the one hand, and the compulsions that privatization and commercialization of space activities that the 21st century have thrown up.

Mr. C. Jayaraj (India) wrote the paper **Is There a Need for a Single Comprehensive Space Law Convention?** The Paper attempts an historical survey of the existing corpus of international space law in context whether conditions are conducive for the establishment of a single comprehensive space law convention. The author noted that UNCLOS does not provide an appropriate model for the proposed comprehensive space law convention, that the international community has been unsuccessful in establishing multilateral agreements on even critical issues like international terrorism; that new rules of

international customary law in context to outer space have emerged; and that a large number of Member States, particularly the space faring states, have not harmonized international space law through national legislation.

The Multi-Door Courthouse: A proposed Mechanism for Dispute Settlement in International Space Law was the title of the paper by **Dr. Gerardine Meishan Goh (Singapore)**. Dr. Goh argued that rules and regulations of international law are futile without a mechanism that provides effective dispute resolution and remedy. It is in this context that the author examined the possibility of establishing an international and multidisciplinary approach to dispute resolution in space activities. The author argued that a compulsory and permanent Multi-Door Courtroom which is in essence sectorialised international dispute settlement mechanism within a flexible framework is an urgent need.

The Non-Appropriation Principle Under Attack: Using Article II of the Outer Space Treaty in its Defence was written by **Mr. Fabio Tronchetti (Italy)**. Mr. Tronchetti offered a new interpretation for the principle of Non Appropriation enshrined in Article II of the 1967 Outer Space Treaty that goes far beyond the classical interpretation. It refutes those who are advocating the abolition of Article II on the grounds that the principle of non appropriation contained therein is an obstacle to the commercialization of outer space and to the prospect of establishing private property rights on the Moon. He argued persuasively on the binding legal value of the non-appropriation principle and proposes that it be accepted as a new rule of customary international law holding a special character. The paper argues strongly that the non-appropriation principle represents a cardinal rule of the space law system which has, in fact, prevented outer space from becoming an area of international conflict among states.

NOTE: the paper by Fabio Tronchetti won the 2007 Isabella H. Ph. Diederiks-Verschoor Award and Prize for Best Paper by a young author.

Dr. Douglas A Vakoch (USA) wrote about **Metalaw as a Foundation of Active SETI**. Dr. Vakoch presented a comprehensive description of current strategies in the Search for Extraterrestrial Intelligence (SETI) and challenges that will be required to be addressed in the event of human and extraterrestrial communication in context to the established Principles of Metalaw.

The results of the UNCOPUOS Legal Subcommittee Working Group on "Practice of States and International organizations in registering space objects" were reported by **Prof. Kai-Uwe Schrogl (Germany) and Mr. Niklas Hedman (UNOOSA)**. The Paper discussed the current status of the on-going debate on the "Practice of States and International Organizations in registering space objects" from 2005-2007. The paper described the work of the Working Group and its achievement in structuring a multi-year work plan which aims to strengthen adherence to the Registration Convention by States.

Ms. Angeline Asangire Oprong (Germany) wrote about **Transfer of Technology in Space: Can the UN Convention on the Law of the Sea serve as a trailblazer?** The author dealt with the as yet unresolved issue of a legal framework for the transfer of technology in outer space. In view of the absence of a clear direction of the rules that should govern such transfer of technology, she suggests that provisions dealing with Transfer of Marine Technology in the UNCLOS could be a starting point for a Transfer of Technology Outer Space regime. In so doing, it will be possible for policy makers to learn from the failures and avoid pitfalls confronted in the implementation of the Law of Sea Convention.

Space Traffic Management for the Moon and the Development of Space Law was the topic of **Ms. Annelie Schoenmaker (France)**.

The paper deals with important need to develop space law to set rules for the management of space traffic not only because human activity in space has increased manifold in the last forty years but especially because of the call to explore and exploit the Moon will

increase such activity exponentially. Thus the author argued that the time has come to think of traffic management not in context to Earth's orbit but in orbits beyond it.

Dr. Edythe E. Weeks (USA) wrote the paper **Power, Politics and Private Property Rights in Space**, and dealt with the politics, power and the ethics of allowing private property rights in outer space. The author argued that dialogue among all stakeholders— the space lawyers; the established space industry; the new space entrepreneurs; the international community; and the general public in order to balance competing concerns must be a precondition to commercialization of outer space for space tourism and connected industries, otherwise the customary practice to influence space law may have the effect of legalizing private property in outer space.

Dr. Prof Sun Guorui (China) wrote a paper about **IPR Issues in Space Cooperation**. He emphasized the importance of Intellectual Property Rights in context to scientific and technological cooperation in outer space, particularly among the important space faring powers. The Paper gives a broad overview of IPR law in the Peoples Republic of China and ends by making an appeal for all countries to resolve this important issue in a peaceful and harmonious manner.

The last paper, written by **Stefan A. Kaiser (Germany)**, was titled **Chinese Anti-Satellite weapons: New Power Geometry- New legal Policy?** The author dealt with the impact of the launch by China of the ASAT weapon from a ground based ballistic missile to destroy its own weather satellite in orbit. The Paper outlines the historical status of PAROS, the current US policy and the broad matrix of international law in context to the Chinese test. The author suggests that the Chinese ASAT test was detrimental to maintaining international peace and security and promoting international cooperation. The paper concludes with the observation that while the Chinese test has changed space geometry, the official, national and international policies have not.