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# LEGAL PROBLEMS CONCERNING SPACE DEBRIS AND LIABILITY CONVENTION

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### ABSTRACT

Space debris has become an official enemy of mankind. Space debris has brought also grave potential threats for human activities in outer space. The 1972 Liability Convention has not regulated the scope and limits of compensation for damage caused by space debris. The author proposed new framework for innovation on the damage caused by space debris as well as amendment of the Liability Convention.

### FULL TEXT

#### 1. Introduction

The busy space activities of some major space powers, space debris is steadily increasing in quantity and has brought grave potential threats and actual damage to the outer space environment and human activities in space. Frequently, debris falls back to earth, which poses a potential threat to man's exploration and use of outer space

activities. Space debris comprise the ever increasing amount of inactive space hardware in orbit around the Earth as well as fragments of spacecraft that have broken up, exploded or otherwise become abandoned.

Space debris has become an official enemy of mankind. We must mitigate and remove space debris in the Low Earth Orbit (LEO) and in the Geostationary Orbit (GEO), through international cooperation and agreement in the fields of space

science, economics, politics and law in order to safeguard the life and property of mankind and protect the earth's environment. Space debris has created a problems, which all space faring nations must endeavor to solve together, in order to maintain a safe environment for future space development.

The Convention on International Liability for Damage Caused by Space Objects of 1972, also known as the Space Liability Convention, is a treaty that expands on the liability rules created in the Outer Space Treaty of 1967. The Liability Convention contains 28 articles. I am going to explain and comment briefly the main contents and key issues on the Liability Convention of 1972 in the text of this article.

I would like to give particularly my view on the legal problems of the *new Draft for the International Instrument on the Protection of the Environment from Damage Caused by Space Debris*, which was proposed by Prof. Dr. Karl Heinz Böckstiegel (Germany) at the Space Law Committee of the aforementioned 66th Buenos Aires Conference of the ILA on 16 August 1994.

Korea is about to join the ranks of advanced countries in the aerospace field. Korea launched its first astronaut in April 2008.

The current situation and indicated trends in the Korean space law and industry are as follows. The Korean Space Centre is also the first space port to be completed in June 11, 2009 at Woinarodo, Goheung county, Junlanam Province on the South coast of the Korean peninsula. The launch of Korea's first space rocket was "partially successful" as the satellite aboard the rocket failed to reach the intended low earth orbit (LEO) on August 25, 2009.

Although the propellants of Naro rocket, or the

Korea Space Launch Vehicle-1, operated properly and the 100-kilogram satellite successfully separated, the domestically-built satellite failed to be put into the desired orbit. The Korea's first geostationary satellite, Communication Ocean and Meteorological Satellite (COMS) will be launched from the above-mentioned Naro Space Center in South Korea around the end of December, 2009.

Although the Republic of Korea was a party to the Space Treaty of 1968, Rescue Agreement of 1968, the Liability Convention of 1972 and Registration Convention of 1975, it has established the specific legislation for the implementation of those international instruments, furthermore it had merely applied the existing laws and regulations by extending their scope of application to the Conventions.

The Korean space policy is based on the national space program as well as the Space Relationship Law of Korea which is divided into three branches: ① the Aerospace Industry Development Promotion Act of 1987, ② the Space Development Promotion Act of 2005 and the ③ Space Damage Compensation Act of 2007.

It deals with the development and the promotion of the aerospace industry and pursues the objective of controlling accident mitigation and the regulation of compensation in case of damage. Korean professors, researchers and experts of space law, members and experts of the Korean Association of Air and Space Law have gradually become interested in the legal problems relating to the threat of space debris, they have discussed the matter in depth, studying the causes of the accident which create space debris, and the legal problems of the liability for compensation for damage caused by space debris.

## **2. The Observation of Space Debris and Accidents Caused by Space Debris**

### **2.1. The Observation of Space Debris**

Between the launch of Sputnik on 4 October 1957 and 1 January 2008, approximately 4,600 launches have placed some 6,000 satellites into orbit; about 400 are now travelling beyond Earth on interplanetary trajectories, but of the remaining 5600 only about 800 satellites are operational - roughly 45 percent of these are both in LEO and GEO. Space debris comprise the ever-increasing amount of inactive space hardware in orbit around the Earth as well as fragments of spacecraft that have broken up, exploded or otherwise become abandoned. About 50 percent of all tractable objects are due to in-orbit explosion events (about 200) or collision events (less than 10).

According to US estimates, the amount of debris, including un-tractable objects of more than 1mm in diameter, is 3,500,000 pieces. The total mass of objects in orbits is 3,000 tons. The orbital velocity of objects in Low Earth Orbit is about 7km/s. The large number of spacecraft, rocket bodies, and other hardware associated with these missions, encounter one of three fates:

- (1) re-entry into the earth's atmosphere
- (2) escape from earth orbit into deep space or
- (3) remaining in the earth orbit.

According to the report of the Japanese Space Debris Study Group, there were about 7,000 pieces of debris of more than 10cm in diameter in space orbit, below an altitude of 5,000km.

The Space Surveillance Network (SSN) of the United States Space Command operates 20 radar and 6 optical observation stations, distributed worldwide. The SSN mission is to detect, track, identify and catalogue all man-made objects in

space. After nearly 35 years of international space operations, almost 22,000 space objects, including space debris, have been officially catalogued, with approximately one-third of them still in orbit around the earth.

There are thousands of pieces of satellite and other objects which have gone out of control and are in orbit around the earth. According to one source, on average more than one piece of debris re-enters earth atmosphere every day. While most will burn up on entry into the atmosphere, an increasing number will survive and land on the earth – endangering life and property.

Moreover, as the physical size of space objects increases, so will the probability that a collision will occur between space objects in outer space. Although there is only a 30 per cent chance of an object hitting land, and a far slimmer chance of that object landing in a populated area, we are not dealing here in the realms of theory, but of reality. The International Space Station operates at about 250 miles altitude, and Space Shuttle flights tend to range between 250 miles and 375 miles. The most debris – crowded area is between 550 miles and 625 miles above the Earth, meaning the risk is less for manned space flight.

The Inter-Agency Space Debris Coordination Committee (IADC) is an international forum of governmental bodies for the coordination of activities related to the issues of man-made and natural debris in space. The primary purpose of the IADC is to exchange information on space debris research activities between member space agencies, to facilitate opportunities for co-operation in space debris research, to review the progress of ongoing co-operative activities and to identify debris mitigation options. One of its efforts is to recommend debris mitigation guidelines, with an

emphasis on cost effectiveness, that can be considered during planning and design of spacecraft and launch vehicles in order to minimize or eliminate generation of debris during operations.

## 2.2. Accidents Caused by Space Debris

The USSR launched their nuclear-powered Cosmos 954 naval surveillance satellite on 18 September 1977; it disintegrated over northern Canada on 24 January 1978 – possibly due to a collision with another object – resulting in the radioactive polluting of an area the size of Austria. The USSR paid C\$3 million to Canada on April 2, 1981, ‘in full and final settlement of all matters connected with the disintegration of the Soviet satellite “Cosmos 954” in January 1978.’

The Japanese Space Debris Study Group also disclosed that the rate of collision among pieces of space debris would increase about threefold by the year 2005, compared with 1987.

Recently, according to NASA’s study, between 20,000 – 70,000 pieces of space debris were circling the earth, at an altitude of 800km-1000, km; this space debris is out of control and non-function. There can be no doubt that as the number of space objects which are launched increases, the amount of debris re-entering the earth’s atmosphere will also increase.

The possibility of a person being injured or property being damaged on the earth from the uncontrolled re-entry into the earth atmosphere of space objects is, however, slim. States Parties shall also take measures to avoid harming the environment of the earth through the introduction of extra-terrestrial or other matter.

The largest space debris incident in history was the Chinese anti-satellite weapon test on January 11, 2007. The event was estimated to have created

more than 2,300 pieces (updated 13-12-2007) of tractable debris (approximately golf ball size or larger), over 35,000 pieces 1 cm or larger, and 1 million pieces 1 mm or larger.

On 10 February 2009, at approximately 16:55 GMT, the inactive Russian Federation communications satellite "Cosmos 2251" and the operational United States satellite "Iridium 33" collided at an altitude of 790 km above the Earth. The collision created a cloud of nearly 700 pieces of space debris.

Space debris remains in orbit for a considerable length of time and pose a risk to spacecraft orbiting Earth. The Space Debris Mitigation Guidelines of the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS) adopted by UN General Assembly Resolution 62/217, aim to curtail the generation of such potentially harmful space debris. The debris cloud created by this collision is like a shotgun blast that threatens other satellites in the region.

## 3. Activities of the UN Committee on the Peaceful Uses of Outer Space

The latest development on this topic is the fact that the Legal Subcommittee of UNCOPUOS included, as a single item for discussion, a proposal at its 47th Session (31 March-11 April 2008) entitled 'General exchange of information on national mechanisms relating to space debris mitigation measures' for consideration at its 48th Session in 2009. The Legal Subcommittee of the UNCOPUOS held its forty-eighth session at the United Nations Office at Vienna from 23 March to 3 April 2009 under the chairmanship of Vladimír Kopal (Czech Republic).

In accordance with the UNCOPUOS General

Assembly resolution 63/90, the Legal Subcommittee considered agenda item 10, entitled "*General exchange of information on national mechanisms relating to space debris mitigation measures*", as a single issue/item for discussion. The Subcommittee welcomed the inclusion of this item in the agenda, noting that it would assist States in understanding the different approaches that States had taken to mitigating and preventing the increase in space debris. The delegations of the following States presented information on their national mechanisms governing space debris mitigation and the ways in which they were implementing the Space Debris Mitigation Guidelines of the Inter-Agency Space Debris Coordination Committee and the Space Debris Mitigation Guidelines of the UNCOPUOS: Canada, China, France, India, Italy, Japan, Russian Federation and United States.

The view was expressed that the problem of space debris was part of the complex issue of the protection and preservation of the outer space environment. The Subcommittee urged States to continue to implement the Space Debris Mitigation Guidelines of the UNCOPUOS and to study the experience of States that had already established national mechanisms governing space debris mitigation.

On these grounds it is suggested that space debris be given serious consideration, in the context of this Committee's Report to the 74th International Law Association (ILA) in 2010, with a view to assessing the development of state practice on the matter. This means analyzing the various domestic mechanisms enacted by states under the UN Guidelines on Space Debris Mitigation. To this end the 1994 ILA Instrument on Space Debris should be the object of careful analysis so as to establish its consistency with the world of today.

#### **4. European Conference on Space Debris**

The 17th meeting of the Inter-Agency Space Debris Coordination Committee (IADC) at Darmstadt, Germany discussed ways and methods to control the growing amount of orbiting debris. Radar and optical telescopes regularly track over 10,000 artificial objects in space. The number of untraceable objects in the size range from 1 cm to 10 cm, that could seriously damage an operational spacecraft, is estimated at between 100,000 and 150,000.

The International Space Station (ISS) will be equipped with about 200 shields in order to defeat impacts of particulate up to about 1~2 cm size. During the 5th European Conference on Space Debris, 30 March to 2 April 2009, held at the European Space Agency, Darmstadt, Germany, experts from a wide spectrum of disciplines communicated their research results through 100 oral presentations and more than 40 poster presentations.

The conference was attended by some 330 participants from 21 countries, making this the largest dedicated space debris conference in the world. Key areas were measurements and debris environment characterization, environment modeling and forecasting (including orbit prediction aspects), risk analysis for the in-orbit and re-entry mission phases, protection and shielding, debris mitigation and re-mediation, and debris policies and guidelines. In the area of Space Surveillance, European researchers presented their proposals for optical and radar sensors, and for data processing methods for a European Space Situational Awareness System (SSA). They looked at expected detection, correlation and cataloging performances.

US and Russian surveillance experts provided some insight into their experience gained over some 50 years of service.

Many participants encouraged international cooperation and/or coordination of surveillance activities. With the high quality presentations by a truly international community of experts, the 5th European Conference on Space Debris provided a comprehensive snapshot of the current state of space debris research.

## **5. Legal Problems on the 1972 Liability Convention**

The Liability Convention of 1972 provides that both intergovernmental organizations and State parties are liable on the basis of fault and non-fault for damage of their space objects, launch vehicles, or component parts thereof may cause in outer space. The Convention on International Liability for Damage Caused by Space Objects had 87 States parties and had been signed by 23 additional State.

The Liability Convention does not apply to damage caused to the launching State's nationals taking part in the launch (Article VII). It does not apply either to foreign nationals involved in the launching operations. This exclusion confirms that the Liability Convention is especially set to protect "innocent" victims not taking part in this dangerous activity.

Finally, Article IX establishes that a claim for compensation for damage must be presented to a launching State through diplomatic channels. As to the identification of the moment in which the claim presented by the State has to be considered as unsatisfied by the launching State, the 1972 Convention does not contain any indication in this

respect.

### **1) The Definition of Space Debris**

Existing space national laws and international space treaties and agreements contain neither a definition nor a description of space debris. The seriousness of the debris problem for space operations, the possible confusion over the literal meaning of "debris," and the need to define the scope of debris all suggest the need for a legal term of art.

According to the description of space object in the Liability Convention, all operational debris except litter appears to be "component parts," although jurists do not agree on this point.

### **2) The domestic and international legal regime for space debris**

Whether all fragmentation debris and micro-particulate matter are included is even more problematic, even if the broader interpretation of "space object" is invoked. Earlier law, including the international treaties and agreements on space, failed to address orbital debris explicitly.

It is necessary for us to solve the question of jurisdiction for space debris and control over space debris, detection and identification of space debris, international responsibility for space debris, and possible remedies for damage caused by debris.

### **3) Space Debris and Liability for Damage Caused in Outer Space**

The Liability Convention sets out a legal regime to provide compensation for damage caused in outer space by space objects. In outer space, liability is based on fault. It is significant to note that negotiations for the Liability Convention did not consider the question of the risks posed by

space debris. As a result, the negotiators did not address several liability issues of extreme importance related to damage caused by space debris. These issues include the meaning of "damage" and the reasonableness of a fault-based liability regime for damage caused in outer space by space debris. It would be possible to amend the Liability Convention so as to include damage to the outer space environment per se, based on the fact that outer space is a global commons.

The principle of fault-based liability is a further impediment to compensation for damage caused in outer space by orbital debris. Even if damage caused by space debris were within the scope of this regime, several other important legal issues, such as proof of negligence, gross negligence and contributory negligence, wilful-misconduct, among others, would remain unresolved.

#### **4) Indirect Damage**

Though the Liability Convention regulated the damage caused by the space objects, but it does not regulated the extent of a causal relationship between space activity and effect occurrence as well as the nature and scope of damage. Generally, It is adequate to compensate for the "direct damage" without cause of parameters as a cause of the space activity. However, it was a hot controversy for "indirect damage" relating to the protection of victims in those day of drafting for this Convention. Reading the Article 1 of the Convention it is a clear that only direct 'damage', and not indirect damage, is contemplated by the Liability Convention. During the preliminary discussion several delegates had pointed out that the question of indirect damage could cause great difficulties in practice. As a hypothesis example for the theory of damages in these neighborhoods as a

result of the satellite debris fallen caused the heart attack, or a businessman's object to the space physical results from damage to the businessman and the financial institutions to borrow money in damages. It was discussed also the issues for the consolation money such as "mental damages" and "profit loss" in concluding with the Liability Convention.

Especially some countries has not regulated the compensation for damages on the mental loss and has enacted the punitive damage for wrongdoer in their domestic law. It was pointed out that the Liability Convention could not connected perfectly the protection of victims in the law of application.

#### **5) Jurisdiction and Control for Space Debris**

Who has jurisdiction and control over space debris? It is significant to note that negotiations for the Liability Convention did not consider the question of the risks pose d by space debris.

It is a desirable thing for us to amend some articles of the 1972 Liability Convention after studying more deeply the said five items of it.

#### **6. Comment on the Draft for the International Instrument and my proposal on the new legal frame for the prevention and mitigation of space Debris**

The Prof. Dr. Karl Heinz Böckstiegel (Co-Chairman, Germany) and Prof Maureen Williams (Rapporteur, Argentina) proposed a new "*Draft for the International Instrument on the Protection of the Environment from Damage Caused by Space Debris*" to the Space Law Committee of ILA with the result that the matter was discussed in depth among participants, as well as members

of ILA at Buenos Aires, Argentina on August 16, 1994. The abovementioned new *"Draft for the International Instrument"* was passed by the Space Law Committee of the ILA same day.

This final Draft has been under discussion and consultation by ILA members for eight years, at the ILA Seoul Conference in 1986, the Warsaw Conference in 1988, the Queensland Conference in 1990, the Cairo Conference in 1992, and the Buenos Aires Conference in 1994, 67th Helsinki Conference in 1996, 68th Taipei Conference in 1998, 72nd Toronto Conference in 2006 and 73rd Rio de Janeiro Conference in 2008.

All the participants of the Buenos Aires Conference deliberated the contents of *"this final International Instrument"* at length, with the aim of protecting the interests of suffering States, damaged enterprises, and victims claiming for damage caused by launching States' space debris. It seems pertinent for this question of space debris to continue under review by the ILA Space Law Committee having in mind that it is now being discussed within UNCOPUOS. It is now important to encourage the examination of the legal aspects of space debris within the Legal Subcommittee of UNCOPUOS.

In pursuance of this target an important step forward was given in June 1996 and June 1997 by Prof. K. H. Böckstiegel who, as representative of the International Law Association, made a presentation to the Full Committee of UNCOPUOS at Vienna, Austria.

At the 1997 Session special reference was made to the work of the ILA on the "Disputes Settlement related to Space Activities" and to the Buenos Aires ILA Instrument on Space Debris.

Following an invitation from the Former Director of the U. N. Office for Outer Space Affairs, Dr.

Jasentuliyana, Prof. K. H. Böckstiegel submitted, in October 1997, a paper concerning the work of the ILA on space debris to be considered by the Scientific and Legal Subcommittee of UNCOPUOS during its Session (7-20 February 1998) at Vienna. In addition, many of Space Law Committee members have provided further comments on this matter and have made contributions tending to give more precision to some of the definitions embodied in the 1994 Buenos Aires International Instrument on Space Debris. Before summarizing these proposals, and in order to keep in line with the 1984 Paris Convention, it is suggested that the 1994 Instrument on Space Debris should, from now on, be referred to as the *"Draft for Convention on the Protection of the Environment from Damage caused by Space Debris."*

Professor Carl. Q. Christol proposes the inclusion of a new subparagraph (d) in Article 1 to define "space object" which would consist of a *"man-made vehicle or entity launched into outer space."* Professor Gabriella Venturini insists on the importance of including space debris on the agenda of the Legal Subcommittee of UNCOPUOS, noting that some delegations were already raising the issue within this body. At the regional level, mention should be made of the XXI Meeting of Air and Space Law organized by the Latin American Association (ALADA) in Mexico, in May 1997. One of the topics on the agenda was "Legal Aspects of Space Debris" and Professor M. A. Ferrer acted as Rapporteur.

I would like to comment some articles of the new *"Draft for the International Instrument on the Protection of the Environment from Damage Caused by Space Debris"* and my proposal on the new legal frame for the prevention and mitigation of space debris and the damage caused by the Space



debris as followings.

1) According to Articles 6, 7, and 8 in “*this Draft for the International Instrument*”, it would appear that a basically faulty, unlimited Liability System was adopted. It would be almost impossible to prove the causes of accident and damage by space debris via the States, enterprises, legal entities and persons which suffered damage.

I would like express my opinion that this “*International Instrument*” have to adopt an absolute and strict liability system in order to protect the interest of mankind and damaged States in the 21st century. It is very difficult for victims to prove the cause of damage caused by space debris under faulty system. It is desirable for us that this “*International Instrument*” would like to insert the word ‘absolutely’ after the word ‘internationally’ in Article 8, paragraph 2, in the final text of the International Instrument as the following Article.

Article 8 (International Liability) Each State or international organization party to this Instrument that launches or procures the launching of a space object is internationally liable absolutely for damage arising there from to another State, persons or objects, or international organization party to this Instrument as a consequence of space debris produced by any such object.

According to the 1972 Liability, Article 2 states; ‘A launching State shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the earth or to aircraft in flight.’ Under the regime of absolute liability, States will be liable under any circumstances except case of *force majeure*.

The adoption of this principle in the Convention did not meet major opposition a generally-accepted rule already existed, describing ultra-hazardous activity

as ‘necessarily a risk of serious harm to a person land or chattels of others which cannot be eliminated by the utmost care’ and which ‘is not a matter of common usage.’

2) The space insurance will be keen to protect, indirectly, future missions that they underwrite by protecting the environment in which those assets will operate. Thus, a mission making a significant contribution to collision hazards amongst satellites and space debris in the orbit could be subjected to penalty premiums, related to the detrimental impact of the mission.

This would provide financial encouragement to operators to adopt appropriate space debris mitigation practices in design and operations, or at least provide them with a cost trade-off between the two.

The proposed quantitative approach therefore has two aims. The first is to encourage the adoption of space debris mitigation principles in mission design by illustrating the cost benefits associated with such measures. The second and ultimate objective is to maintain unlimited access to orbit for all responsible users who wish to continue to exploit the commercial, strategic and scientific potential of near-earth space.

In the case of damage caused by deactivated satellites or space debris, upon payment of compensation for damage, the insurer must pay to the insured person the insurable amount thereof, in accordance with a general principle of insurance law. After Article 8, in the said International Instrument, I suggest the insertion of the following paragraph (*cf. Annex 3*): Article 8, (2). The launching satellite State must converse the liability insurance for damage caused by space debris in order to guarantee perfectly the compensation for personal and property damage of the damaged State, legal

entity and person.

3) I would like to propose the establishment of an International and Environmental Monitoring Organization (tentative title), under the United Nations Committee for the Peaceful Uses of Outer Space in order to track, observe, detect and monitor the space debris, to prevent and mitigate the damage caused by space debris. It is a desirable thing for us that contracting states of the 1967 Space Treaty and the 1972 Liability Convention must exchange many current information for the space debris and establishment of an integrated monitoring system for the purpose of preventing and mitigating the damage caused by space debris in the legal frame as a special, affiliated organization under the auspices of the United Nations.

4) It is necessary for us to establish a new 'International Fund for Prevention and Mitigation of Compensation for Damage Caused by Space Debris' (tentative title), to which satellite-launching States have to contribute in proportion to the quantity of their satellite launches, under the Special Agency of the UNCOPUOS or an 'International and Environmental Monitoring Organization for Prevention and Mitigation of Compensation for Damage Caused by Space Debris under the United Nations' (tentative title), to prevent and compensate for damage caused solely by space debris, and to protect the damaged State.

The international maritime law had been adopted already the International Convention on Civil Liability for Oil Pollution Damage of 1969 and the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage of 1971 such as a useful mechanism for ensuring the payment of compensation for oil pollution damage .

The aforementioned Special Space Agency of the UN or a new International and Environmental Monitoring Organization should provide the funds needed to carry out such a survey efficiently, its purpose being the prevention of space debris accidents and the provision of compensation for damage caused by space debris.

I would also like to suggest the legislation of regulations with regard to the establishment of an 'International and Environmental Monitoring Organization' under the auspices of the UN and the establishment of the International Fund, as mentioned in Article 4 in the Rapporteur's final 'International Instrument.'

It is necessary for us to enact the "*Draft for the International Instrument on the Protection of the Environment from Damage Caused by Space Debris*" after studying it deeply by the Legal Subcommittee of UNCOPUOS.

## 7. Conclusion

The obvious conclusion is that danger is clearly posed by the uncontrolled re-entry of space debris into the earth's atmosphere. This danger is increased by the inability of modern space science and technology to predict the time of disintegration of non-functional and abandoned satellites and other space objects in outer space. What is important is that the potential for risk and damage is always present.

Over the last few years, space debris has become a matter of increasing concern and has been identified as a serious threat to the further development of man's exploration and utilization of outer space. The minimization of space debris requires policies of prevention and correction. In order to mitigate, if not eliminate, the presence of debris,

these policies will have to be implemented by both active and passive measures. They must include the previously identified procedures and must be legal obligations.

The steady increase of space debris shares with many other pollution problems the characteristic that the broader public may well ignore it, until a serious incident which threatens or takes human life, or creates considerable economic damage, makes action essential. The space debris problem can only be effectively solved by international cooperation. Consultation and cooperation between space agencies are taking place with increasing frequency. It is my firm opinion that only international and regional cooperation could solve the problem of environmental pollution, including damage caused by space debris meanwhile, States have to keep in mind that the exploration and use outer space is for the benefit and in the interests of all countries.

We should try to reach an international agreement, binding on all space-using nations, which encompasses the need to protect the space and earth environment.

The Space Law Committee of ILA was sent it to the UN COPUOS to recommend the legislation of the said new *Draft for the International Instrument*. After the committee of space-faring nations has reached consensus on the basic steps to be taken, and has presented its findings to the Scientific and Technical Subcommittee of the UNCOPUOS, it may be appropriate for the Legal Subcommittee of UNCOPUOS to take up the matter, in order to debate and resolve the definition, jurisdiction and control, liability, and other legal issues that many legal experts consider need addressing in the preparation of an international agreement.

It is necessary for us to exchange the current and

various information and view among the countries on the damage caused by space debris and to establish the integrated monitoring system in the world for the purpose of preventing and mitigating the damage caused by space debris as a special and affiliated organization under the United Nations. First of all, I would like to propose the establishment of a new Asian-Pacific International and Environmental Monitoring Organization (tentative title) for prevention and mitigation of space debris and to track, observe, investigate of space debris and the damage caused by space debris.

Furthermore it is necessary for us to enact independently a the new "*Draft for the International Instrument on the Protection of the Environment from Damage Caused by Space Debris*" as well as to amend some articles of the 1972 Liability Convention in order to protect victims in the case of the damage for compensations caused by the space accidents including space debris.