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The Draft of the International Law Association for a Convention on Space Debris(Buenos Aires) Can it Meet the Needs o f 21st Century?

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ABSTRACT

The next century will be dominated by an ever increasing of space activities and will witness a considerable boost in commercialization in space affairs.
As the result, government control will be severely effected by the commercial interest of private entities, specially when we realize that the future private sectors in space activities are mainly dominated by multinational organization which make the necessary governmental and international control even more complicated.

The needs for an international binding instrument to monitor and control the space activities in such a way that while controlling the environment from space debris and contamination/pollution, does not hinder of the process of using the outer space for benefits of mankind.

As this draft is being prepared for such a purpose, there are doubts that it will be able to meet the challenge of space activities in the Twenty First century.

This study will provide analysis and comments on different part of the draft instrument such as:

* Definition of environment.
* Space activities originated out of jurisdiction or control of any state.
* Obligations and responsibilities of states in regard to commercial and non-governmental entities.

Suggestions are made for changes to be applied to the draft instrument to accommodate the needs of the space activities in Twenty First Century.

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INTRODUCTION

The beginning of space activities is marked by the lunching of Sputnik-1. It is also fair to say that Sputnik was the first source of space debris. After close to fifty years of constantly growing space industry and increasing space activities, the subject of space debris as a hazard to environment has become of great concern to all nations, regardless of the degree they are involved in developing and/or using space technology.

The subject has been getting more alarming in recent years, since number of private parties involved in different areas of space industry is growing rapidly. We are witnessing private sector to take over many parts of the industry that traditionally were in government control. Of course this is normal considering the level of the development of the technology. Private and multinational corporation, and even self reliant government organizations have enjoyed the rapid growth in space based communication, remote sensing, weather forecasting, space based tele-medicine and etc. Many more areas are being introduce such microgravity, Navigation and Air Traffic Control, etc. What is usually left out of this success story, is that for each of this services their is a certain amount of debris and pollution/contamination involved. This means that the earth environment is facing a threat of new dimensions and magnitude that is compatible to technology developed, unmatched in the history of mankind.

From 7184 objects observed, only 350 are operative satellite, and 1427 are non-operative satellite and more that 5407 are debris[1]. Major part of the debris has been produced by explosion of satellite. The debris population is the greatest between 500Km and 1200Km orbit. Debris in LEO and GEO are the most dangerous ones. New measures of environment protection is obviously needed.

It should be noted that albeit all its hazardous potential for the environment, space technology creates many new possibilities and venues for protection of the environment. As a matter of fact following the United Nations Conference on Environment and Development at Rio de Janeiro, from 3 to 14 June 1992, a report on application of space technology in implementation of Agenda 21 is being prepared at the request of the Committee on Peaceful Uses of Outer Space[2].

The question of environment protection in face of growing space activities has also been addressed in international treaties. Article IX of Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies(adapted in 1967) requires: "... States parties to the Treaty shall pursue studies of the outer space, including the moon and other celestial bodies, and conduct exploration of them so as to avoid their harmful contamination and also adverse changes in the environment of the earth resulting from the introduction of extraterrestrial matter and, where necessary shall adopt the appropriate measures for this purpose. ..."

Article 7 of the Agreement Governing the Activities of States on the Moon and other Celestial Bodies (adapted in 1979) requires "...States Parties shall also take measures to avoid harmfully affecting the environment of the earth through the introduction of extraterrestrial matter or otherwise..."

More recently use of nuclear power in space has become of some concern such that UN General Assembly Resolution 47/68 of 14 December 1992, Principles Relevant to Use of Nuclear Power Sources in Outer Space, was adopted. Principles 3 and 4 of this resolution make indirect attempt to take some measures to reduce the risk to environment.

Many studies has shown the importance and situation of the space debris[3,4], as well. These reports are mainly prepared due to the fact that the operative environment for new activities is becoming ever more dangerous.

Obviously, In spite of all the progress in different sectors of the industry, and wide spectrum of the technology and applications, proper attention has not been paid to the environmental issues. The first serious international step taken concerning the protection of the earth and outer space environment, is the ILA Draft Instrument, i.e. "Buenos Aires International Instrument on Protection of the Environment from Damage Caused by Space Debris"

This draft even though commendable in its own right, and a long step from a situation of ignorance and negligence to the environment, which is the characteristics of the development stage of any technology, is not properly worded and does not seem to change the status quo for the future of more commercialization and privatization of space industries. The sprite of the draft is to consult and to inform, which is not necessary a new idea in space treaties and agreements. Article IX of Outer Space Treaty requires the parties to consult others when they consider their planned space activities may be harmful to them. Not too many reports are documented in this regard.

In the present work, after a critical view of some parts of the draft , some suggestion are made , which are considered necessary to make the instrument more efficient.

THE INSTRUMENT RECONSIDERED

In finalizing the draft one should note with the rapid growth of technology and industry, before this instrument can become effective the situation will be considerably different. Thus we need to prepare the instrument in such a way that it will be more applicable in the real world of tomorrow.

In Article 1.d, environment is defined as " both the outer space and earth environments within or beyond national jurisdiction." It is not clear if this definition includes the moon or other celestial bodies, which will be of increasing importance in the near future. There will be a lot of activities on the moon and other celestial bodies, which require the implementation of considerable amount of equipment and material along with human resources. These items can be the potential sources of pollution/contamination and debris. At the same time they may suffer from pollution/contamination and debris from other sources, as well. Therefore, we suggest that the instrument should explicitly specify the moon and other celestial bodies are included in the definition of the environment.

We propose that Article 1(d) be restated as follows:

"Environment for the purposes of this instrument is, the outer space including moon and other celestial bodies, and earth environment within or beyond national jurisdiction."

Article 3 part 2 falls short of considering space activities which may originate or take place in areas under jurisdiction of no particular state. High seas and outer space are of such significance. A lunch from high seas or outer space, which may result in damage to environment and/or property can not be handled by this instrument. This situation may arise, when a private party attempts a lunch from a point out of jurisdiction of no state, which results in a failure and damaging debris and pollution/contamination. The instrument is not explicit in defining the responsibilities, in particular if the lunching party is not willing to abide with the instrument.

NATIONAL REGULATORY BODY

The next century will certainly be dominated by an even increasing level of space activities and will witness a considerable boost in privatization and commercialization of space affairs. This easily can be observed by the current trends in space faring nations. A contract goes to private sector to manufacture the next generation space shuttle in United States. Many space industrial centers in Russia are turning to more self reliance from government budgeting. European Space Agency has long history in commercial space activities. Needless to say china as a rather new comer to the commercial arena has made a considerable success in offering wide range of space services. India is making strong headway to offer her own services, probably we will witness her success in shorter time than is expected.

Article 3 imposes on states and international organizations parties to this instrument to protect the environment from damages caused by debris as result of their space activities. This means all states and international organizations parties to the instrument have the obligation to make sure that their space activities and that of organizations under their control and/or jurisdiction are properly guided and monitored.

In this time of increasing rate of commercialization and privatization of space activities the wording of this article is not clear enough of how to achieve its goals. What standards and guiding regulations are to be used? How different private organization know what level of debris is acceptable in the future? For that matter how a government knows what level of debris to expect and to accept from different organizations to fulfill the goals of the instrument?

Therefore rules, regulations, standards and guidelines are needed to make it possible for both commercial organizations and governments to know how to perform and control. A NATIONAL REGULATORY BODY is essential to establish appropriate rules, regulation and standards, as well as to control and monitor the activities of the commercial sector in their national jurisdiction, to control and reduce the damage and risk caused by debris resulted from their space activities.

It is note worthy[5] that so far five states , i.e. Russian Federation, Republic of South Africa, Sweden, United Kingdom ad

United States are in possession of national space legislation.

INTERNATIONAL REGULATORY BODY

As stated above, rules, regulations and standards are the essential tools for any government and private sector to control and to perform their space activities with regard to control of space debris, in a meaningful way; and the fact that space activities is not limited to national boundaries and national jurisdiction. Therefore uniformity in rules, regulations and standards are essential among states and international organizations parties to this instrument. This uniformity is more important considering the obligations which article 4 of this instrument imposes on all states and international organizations to prevent, inform, consult and negotiate in good faith.

As the current trends already show, next century is going to witness unprecedented increase in volume and privatization of space activities. However, one should bear in mind that "... to inform and to consult in good faith..." as Article 4 of the instrument is requiring, are not necessarily the strong points of competitive private sector; particularly in area such as outer space and high seas that no government has any judicial control. Therefore, time is crucial for the international community to take proper measures for protection of the environment, in form of an INTERNATIONAL REGULATORY BODY(IRB).

This international body should be established as part of the instrument to coordinate the national governments to control and guide their space activities, thus to fulfill the goals of the instrument.

Furthermore, the IRB can and must establish proper guidelines and regulations for high seas and outer space activities, which are under no governmental jurisdiction and control.

IRB as part of its activities can offer advise and consultation, which in particular is useful for the newcomer to space arena, to direct their space activities properly; and set the stage for more meaningful cooperation among space faring nations for the purpose of environmental protection.

It should be noted that the creation of an international space agency has been suggested many time[6]. However, it seems that the time is not ready for such an all-out effort. But a meaningful cooperation in form of the suggested regulatory body can enjoy a wider support of all parties due to its goal of protection of environment.

SPACE EXPLORATION AND ENVIRONMENT PROTECTION

The history of human civilization and in particular technology development has taught us that any development has its own environment degradation and damages. Space exploration in its own right has been of no difference. The fact that the instrument is the subject of discussion is the proof of this claim. However we have learned while to accept this fact, we should try to reduce the environment damage and even to look for remedies.

At this special point in time, that we have new frontiers to explore we need to establish flexible mechanism with regard

to future technology development to protect our environment and that of the future generations, while not hindering the space activities. This requires that all states and organization to cooperate in good faith to create such mechanism in form of the aforementioned International Regulatory Body.

The role of the IRB is to have an updated assessment of the current environment hazards and technological abilities and potentials. With this information proper standards can be introduced which are to be met in targeted times. Obviously, these standards are to be followed by the states and international organization. This will guaranty us a course which not only improves the current situation, but also generate less and less debris and pollution/contamination as time goes by.

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