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**Committee on the Peaceful  
Uses of Outer Space**  
**Scientific and Technical Subcommittee**  
**Fiftieth session**  
Vienna, 11-22 February 2013  
Item 7 of the provisional agenda\*  
**Space debris**

**National research on space debris, safety of space objects  
with nuclear power sources on board and problems relating  
to their collision with space debris**

The present conference room paper contains a submission received by the Secretariat from the International Institute of Space Law. The document is issued without formal editing.

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## **Input from the International Institute of Space Law**

### *I. The facts*

There are a growing number of debris pieces in all usable orbits around the Earth. These range in size from obsolete whole satellites to minute pieces of debris. Our current technology presently only allows us to track the approximately 25,000 pieces of debris that are 10 cm or larger.

The current amount of debris in space is acceptable — in the sense that it does not unduly hinder current and planned space activities — but in an increasing way negatively influences the ability to use these orbits around the Earth. If the population of space debris continues to increase at a significant rate, it can be anticipated that the use of outer space may be severely affected. Therefore, both practical and legal action is necessary.

### *II. The legal situation*

#### 1. Current questions

Preliminary remark: One must clearly distinguish between legal provisions of a rather preventive nature (i.e. those that prohibit certain actions) and provisions that have a sanctioning character.

In total, one must distinguish four different perspectives, characterized by four different questions:

1. Is there a duty for space debris mitigation?
2. Is there a duty to remove space debris?
3. Is there a duty to remediate space debris?
4. Is there an appropriate sanction in case of accidents caused by space debris?

#### 2. Tentative answers

For these pertinent questions the international legal system has only tentative answers. Those are sketched out in the following:

Ad 1: The legal regime for space debris mitigation is characterized by a number of provisions of the outer space legislation (Arts. I, II, VI, VII, IX OST and 7 MA), which may arguably be interpreted as also dealing with the problem. Moreover, the non-legally binding Space Debris Mitigation Guidelines (annex to United Nations Document A/62/20) are intended to directly address this problem. These Guidelines were first drafted and adopted by a group of space agencies without an official (United Nations) mandate, and were later endorsed by the United Nations Committee on the Peaceful Uses of Outer Space and the United Nations General Assembly. They basically ask for action by States to minimize the further increase and production of space debris. Arguably this commitment has not yet achieved the status of a legal obligation, and the Guidelines are clearly expressed to be undertaken on a voluntary basis.

Ad 2: As concerns a duty to remove space debris, such duty can certainly not be regarded as a part of international law. There is no concrete provision in the space

legislation or in general international law that would require such removal. This is particularly so because the bringing into orbit of pieces of space debris has thus far not been considered as an illegal act. As is well known, in international law any kind of liability for permitted actions is rather the exception than the rule. States, however, may still remain “responsible” for the production of debris under the circumstances contemplated by Article VI OST.

Ad 3: As to the existence of a duty to remediate space debris, one must state that this depends on the status of the respective international law. So far, no specific duty to that effect can be discovered. The *Space Debris Mitigation Guidelines* as endorsed by the United Nations General Assembly (referred to above) do not contain such an international legal obligation. At this stage, any kind of remediation measure is a purely voluntary action of States.

Ad 4: As to the appropriate reaction (sanction) of international law, there are a number of reasons why the existing international liability legal regime as contained in Article VII of the Outer Space Treaty and in the Liability Convention cannot really address the problem of space debris. These stem not only from the limited definitions of concepts such as “damage” and “space object” in the Liability Convention, but also more practical reasons related to the necessity to attribute any given damage to a certain space object in order to be able to identify the responsible launching State and hold it liable. In case of very small pieces of space debris, such identification would in most cases be hardly possible. Therefore, fundamental doubts can be raised as concerns the efficiency of the current legal rules with regard to space debris.

### III. Conclusion

Space debris is a growing danger, particularly for the usable and used parts of outer space.

With regard to the legal regime, there is an emerging obligation, which may acquire customary quality in the near future, to mitigate space debris. Any obligation, however, relating to its remediation does not yet exist. Moreover, international liability law for human space activities does not yet extend to any kind of liability for dangers based on space debris. So far, no explicit space law on this issue exists. In 1978, the Soviet nuclear powered satellite COSMOS 945 went down in the Northwest Territories of Canada. The amount claimed by Canada was not fully paid by the Soviet Union. However, the Soviet Union in principle accepted a certain responsibility with regard to these actions. Whether this can be regarded as a precedent in international law with regard to space debris is, however, rather doubtful.

Therefore, one must be rather careful with regard to the attribution of legal obligations on the thus far permitted production of space debris. It seems to be an important task for the future to formulate further principles — one suggestion is that a “due diligence” obligation be expressly included — that make any dangerous use of space objects subject to an appropriate liability regime based on the Space Debris Mitigation Guidelines and the Liability Convention respectively.