

Proposal for Forming an IAA Study Group SG 5.10

Title of Study:
Orbital Debris Removal: Policy, Political, Legal and Economic Considerations

Proposer(s):
Stephan Hobe & Ray A. Williamson

Primary IAA Commission Preference: Commission 5
Secondary IAA Commission Interests:
(From Commission 1 to Commission 6)

Members of Study Team

Chairs: Stephan Hobe, Ray A. Williamson

Secretary: TBD

Other Proposed Members:

Heiner Klinkrad, ESA; Brian Weeden, Secure World Foundation, Henry Hertzfeld, George Washington University; Frans van der Dunk, Univ. Nebraska at Lincoln; Setsuko Aoki, Keio University; Leslie Jane Smith, Riga Graduate School of Law; others, TBD

Short Description of Scope of Study

The yearly growth of debris in Earth orbit poses an increasing risk to safe and secure operation of spacecraft, especially in low Earth orbit (LEO). It is becoming increasingly clear that mitigation measures will not be enough to ensure a sustainable future for space operations. In fact, debris experts predict that in time, it will be necessary to remove some debris from orbit.

Overall Goal:

In addition to the extraordinary technical challenges presented by orbital debris removal, the effort also raises significant policy, legal, and economic challenges. This study, which is intended as a follow-on to the current Commission 5 study, "Space Debris Environment Remediation," will focus on understanding the current policy and legal issues raised by removal of debris from orbit and other possible remediation techniques. It will also examine the economic impacts of debris removal. Finally, the study will examine proposed policy and legal changes in the management of Earth orbit activities and recommend possible courses of action to follow in achieving a safer, sustainable orbital environment.

Intermediate Goals:

Policy Issues. Debris removal will face several challenging policy issues, including how to deal with the removal of debris that may contain sensitive technologies. Further, many of the debris objects that could be considered for active debris removal might originally have had dual applications, as both military and civilian systems. This study will examine these and other policy

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issues. It will especially explore how international cooperative mechanisms might ease fears that debris removal would be used for spying on commercial or State secrets.

Legal Issues. Legal issues on debris removal will be extremely challenging to resolve. For example, the international community has not reached consensus on what constitutes orbital debris or the definition of the term "object" in the Outer Space Treaty and Liability Convention. Further, what is apparently a piece of debris might in fact be a working satellite that is currently hibernating. In addition, according to the Liability Convention, a launching State still owns a space object even after it has become orbital debris. Who has the legal right to remove that debris? This study will explore the key legal questions inherent in debris removal and make recommendations them.

Economic Issues. Even if the policy and legal issues can be solved, the costs of debris removal are likely to be very high. This report would examine the various technical proposals that are being put forth to deal with debris removal and attempt to identify the cost issues associated with the most promising ones. It would also explore options for paying for debris removal.

Methodology:

To kick-start the study, we plan to hold a 2-day workshop in 2010 with as many study participants as possible in attendance. In addition to identifying specific areas of needed research, and developing an outline, the workshop will make assignments of chapters or sections to authors. We would ask prospective authors to return their draft chapters for discussion within six (8) months so as to move this study along as quickly as feasible. We would then convene a second workshop to discuss the chapters and refine them two to three months after receiving the chapters. We estimate that such a schedule would allow the study chairs to submit the study draft for external review well within two years, allowing it to have an impact on the growing debate over debris removal.

Time Line:

The study group would commence activities in fall 2010 and complete its report by 2012.

Final Product (Report, Publication, etc.):

Report with sections on policy, legal, and economic issues and recommendations for developing approaches to debris removal.

Target Community and Expected Effects:

The international community involved in space activities.

- Presentation to UNCOPUOS, international space conferences
- Gain better understanding of the policy, legal, and economic issues in debris removal and recommended solutions

Support Needed:

Funding for some travel, publication

Potential Sponsors:

Secure World Foundation
ESA, NASA

To be returned to the IAA Secretary General Paris by fax: 33 1 47 23 82 16 or by email: sgeneral@iaamail.org

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No Signature required if document authenticated.

Follow-up Section for IAA use only

Initial Phase
Application received:
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Web Site Section opened:
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Final Phase
Peer Review by Commission Completed:
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Publisher Selected:
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