STATUS MARCH 2017

IAA STUDY 5.10—POLICY, POLITICAL, LEGAL AND ECONOMIC ISSUES IN ACTIVE SPACE DEBRIS REMOVAL

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Overall Status

1. The entire report is in draft form for review by the C.S. 5.10 team.
2. Because of their importance, of particular concern are the conclusions and recommendations of the report (ch. 7), which will receive extra scrutiny before submitting the report to IAA for Academy review.
3. During IAA Spring Meetings, we'll discuss additional points, items missing, etc.

Current timeline estimate

- Completion of Study Team review and development of final draft—September 2017
- IAA Review Starts—September 2017
- Publishing depends on IAA schedule

Chapters Outline

Chapter 1: Introduction

a) The orbital debris problem and why active debris removal (ADR) will help

b) Short summary of technical proposals and issues: summary of Debris Remediation Study – Study Group 5.5

c) Limits of ADR for remediation; role of collision avoidance

Outline, cont.

Chapter 2: On-orbit servicing (OOS) and its relationship to ADR

2.1. Techniques for OOS
2.2. Preliminary considerations on financing OOS
2.3. Orders of magnitude
2.4. Initial solutions identified
2.5. Potential of OOS

Outline, ch. 3

Chapter 3: Political/Policy Issues

3.1 Role of national and international politics

3.2 Relationship of current space sustainability efforts to ADR/OOS

3.3 Collision avoidance

3.4 Creating transparency & confidence building measures

3.5 Roles of less developed countries in ADR

Outline, Chap. 4

Chapter 4: Legal Issues

4.1 Treaty Rules on Liability and Third Party Risk

4.2 Definitional Issues

4.3 Legal Rules Applicable to Orbital Debris

4.4 Dividing Technical Rules into Two Groups

4.5 Development of Technical Rules Related to Orbital Debris

4.6 Codes of Conduct At the European Level

4.7 Summary of Guidelines

4.8 Legal Basis for ADR, OOS, and JCA

4.9 Beyond the Space Treaties: Other Regimes

Outline Chap. 4: Cont.

4.10 Prototypes in International Law: Law of Salvage

4.11 Salvage and the Principal of Cooperation

4.12 Interference in Property Rights

4.13 Impact of Insurance on Orbital Debris Remediation

4.14 Future Approach: What New Laws/Treaties Might be Needed?

4.15 Conclusions

Outline Chap. 5. Economic Issues

5.1 General Considerations
5.2 Economic Dimensions of ADR
5.3 Domains (ADR Market Segmentation)
5.4 Stakeholders
5.5 Values and Benefits
5.6 Costs
5.7 Economic and Financial Models
5.8 Financing
5.9 Economic Analysis of Risk and Insurance
5.10 Implementation
5.11 Cross-Synergy Potential with OOS

Outline Chaps. 6 & 7

Chapter 6—ADR Metrics for Analysis

6.1 Derelict Collison Prevention

6.2 Graveyard Orbits

6.3 Summary

Chapter 7—Conclusions and Recommendations

7.1 Political/policy Matters

7.2 Legal Issues

7.3 Economic Issues

7.4 Recommendations