STUDY GROUP OF LEGAL ISSUES ON THE ADVANCED ORBITAL ACTIVITIES

「先端的な軌道上活動に関する法的課題」研究会

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STUDY GROUP OF LEGAL ISSUES ON THE ADVANCED ORBITAL ACTIVITIES

The Research Area and Our Goal
ACTIVE DEBRIS REMOVAL (ADR)

An Overview
IADC SPACE DEBRIS MITIGATION GUIDELINES OF 2007

Limit Debris Released during Normal Operations
Minimize the Potential for On-Orbit Breakups
Post Mission Disposal
Prevention of On-Orbit Collisions
Identification and formulation of legal systems for supporting the ADR

- JAXA is planning to experiment an active removal of a large-size debris.

The Experiment of Core Technology for ADR

- Recognition of on-orbit situation
- Proximity operation
- Advanced onboard image processing

Toward the World’s first Active Large sized Debris Removal

Target (TBD):
The upper stage of a Japanese rocket

ADR mission

Approach/Capture/Orbit transfer/Controlled reentry

Source: Presentation by Yasushi Watanabe at 1st meeting of the Study Group, modified and translated by Akihiro Iwaki
デブリ除去衛星のデブリへの非協力接近
デブリは運用中の宇宙機と異なり、自らの位置を示す電波などを発信しないため、デブリ除去衛星側で捜し出す必要があります

ターゲットデブリ
（例：ロケット上段部）

デブリ除去衛星から見たデブリ
Swiss Space Center

European Space Agency
THE NEED FOR INTERNATIONAL STANDARD ON ADR ACTIVITIES

To promote industrial development by encouraging private parties to develop technologies

To secure the safety and a clean environment at the outer space
OUR GOALS

To identify the possible legal systems to implement the ADR

To examine pertinent legal issues concerning ADR mainly from international law perspective

To make proposals to the Japanese Government concerning the domestic law on ADR
### MAIN LEGAL ISSUES

<table>
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<tr>
<th>Jurisdiction</th>
<th>• A state’s competence to conduct ADR without obtaining the consent of the state of registry.</th>
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<td>Liability</td>
<td>• Liability in a case when ADR caused damage on other state's space object.</td>
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<td>Domestic Law</td>
<td>• Insurance and the government compensation</td>
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| International Cooperation | • Burden sharing of ADR.  
• Notification and consultation. |
The Members

Joint Research Project
Space Law Research Center, Keio
Legal and Compliance Division, JAXA

Academia
- Prof. Kazuhiro Nakatani
- Prof. Setsuko Aoki
- Prof. Tateo Horiguchi
- Prof. Yurika Ishii
- Prof. Makiko Shigeta

Industry
- NEC Corporation
- Kawasaki Heavy Industries, Ltd.
- Mitsubishi Electric Corporation
- Astroscale Japan Inc.

Government (Observer)
- National Space Policy Secretariat, CAO,
- Space Policy Division, MOFA
- Space Industry Office, METI
- Space Development and Utilization Division, MEXT

Slide prepared by Akihiro Iwaki
<table>
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<th>OUR ACTIVITIES IN FY 2018</th>
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<td>Case Studies on international certificate systems (wind power plants and ships for international navigation)</td>
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<td>Regulations on destroyed buildings, cars and debris in natural disaster</td>
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<td>ADR and Article 8 of Outer Space Treaty</td>
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<td>Environmental Modification Convention and ADR</td>
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ADR AND ARTICLE 8 OF OUTER SPACE TREATY
THE ISSUE

State A’s ADR
Satellite X

An Object Y Not Registered to State A
A State Party to the Treaty on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof, while in outer space or on a celestial body.
WHAT ARE DEBRIS?

Space debris are all man-made objects including fragments and elements thereof, in Earth orbit or re-entering the atmosphere, that are non-functional.
IS DEBRIS AN OBJECT UNDER ARTICLE 8?

Space Objects
- Registered to a State and Functioning

Debris
1. Not Registered
2. Registered State Unidentifiable
3. Object Untraceable

Man-made Objects in Outer Space
- Registered to a State but defunct
There is no treaty directly applicable to this situation.

There is no *a priori* jurisdictional rule in an international area under international law.
COMPARISON: THE JURISDICTIONAL RULE IN THE HIGH SEAS

- Permanent Court of International Justice allowed non-flag state to exercise its criminal jurisdiction in a collision case at the high seas.

S.S. Lotus Case (1927)

- Denied the judgment of S.S. Lotus.
- Provided that only the flag state has its enforcement jurisdiction.

High Seas Convention (1958)
THE LIMITS OF OUTER SPACE TREATY

Principle of equality; Freedom of scientific investigation in outer space (OST Art 1)

The need to conduct ADR
ADR AND USE OF FORCE

United Nations Charter Article 2(4) All Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations.

国連憲章2条4項 すべての加盟国は、その国際関係において、武力による威嚇又は武力の行使を、いかなる国の領土保全又は政治的独立に対するものも、また、国際連合の目的と両立しない他のいかなる方法によるものも慎重なければならぬ。
EEA, Draft International Code of Conduct (CoC) for Outer Space Activities, 31 March 2014.

Russia’s Criticism against CoC in Committee on the Peaceful Uses of Outer Space (COPUOS)
COOPERATION TO ENHANCE TRANSPARENCY AND CONFIDENCE BUILDING MEASURES

A Need for Transparency and Confidence Building Measures (TCBMs)

COPUOS, Draft Guidelines for The Long-Term Sustainability of Outer Space Activities, A/AC.105/C.1/L.367. (LTS Guideline)
ADR AND EXPORT CONTROL

United States International Traffic in Arms Regulations
“EXPORT” UNDER INTERNATIONAL TRAFFIC IN ARMS REGULATIONS

Releasing or otherwise transferring technical data to a foreign person in the United States (a “deemed export”);

Transferring registration, control, or ownership of any aircraft, vessel, or satellite subject to the ITAR by a U.S. person to a foreign person;

Performing a defense service on behalf of, or for the benefit of, a foreign person, whether in the United States or abroad; …
THE NEED FOR INTERNATIONAL COOPERATION
POSSIBILITY OF AN INTERNATIONAL REGIME?

Information Sharing (in designating debris for ADR and monitoring the situation)

Dispute settlement

International funding for ADRs (burden sharing)
Identification and formulation of legal systems for supporting the ADR

**Domestic level**
New technical standards and certification system for Safety are required

**Bilateral level**
Common technical standards and certification system for Safety are required

**Global level**
Global technical standards and certification system for Safety are required
CONCLUSION

The need for international cooperation / common standards

• To secure the environment of the orbit.
• To promote the development of space industry.

The challenges for establishing international rules

• The difficulty in establishing a new treaty.
• The merits and disadvantages of soft-law rules.