

14TH SPACE LAW SYMPOSIUM

RISK MANAGEMENT AND CONTINUING SUPERVISION IN ORBIT

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FINDINGS ON LEGAL NORMS IN OUTER SPACE: FOR SUSTAINABLE SPACE ACTIVITIES

◆ Establishing International Norms

◆ Prohibition of DA-ASAT

UN Resolution, China-Russia

◆ Compliance with COSPAR PPP

Non-legally binding

◆ Transparency in Space Exploration

OST Art. 11 Project, Artemis Accords

◆ Military Use of Outer Space

Russia-Ukraine War

◆ MILAMOS

Rules for military use of outer space



◆ National Implementation

◆ Authorization

Licensing mechanism

◆ Continuing Supervision

Legal aspect

Technical aspect

RISK MANAGEMENT IN ORBIT

◆ Project Management

◆ Avoidance

E.g., Prohibition

◆ Mitigation

E.g., Standardization

◆ Transfer

E.g., Insurance

◆ Acceptance

E.g., Go for launch!

◆ National/International Framework

◆ Sharing

E.g., Insurance requirement and government indemnification for:

- Launching rocket
- Operating satellite

◆ Incentive

E.g., Space Sustainability Rating (SSR),
Net Zero Space Declaration

CONTINUING SUPERVISION IN ORBIT

◆ Legal Aspects

◆ Licensing

E.g., Reporting, Renewal

◆ National Space Agency

E.g., Support to regulatory authority

◆ Technical Aspects

◆ Monitoring

E.g., Space Situational Awareness (SSA),
Space Domain Awareness (SDA)

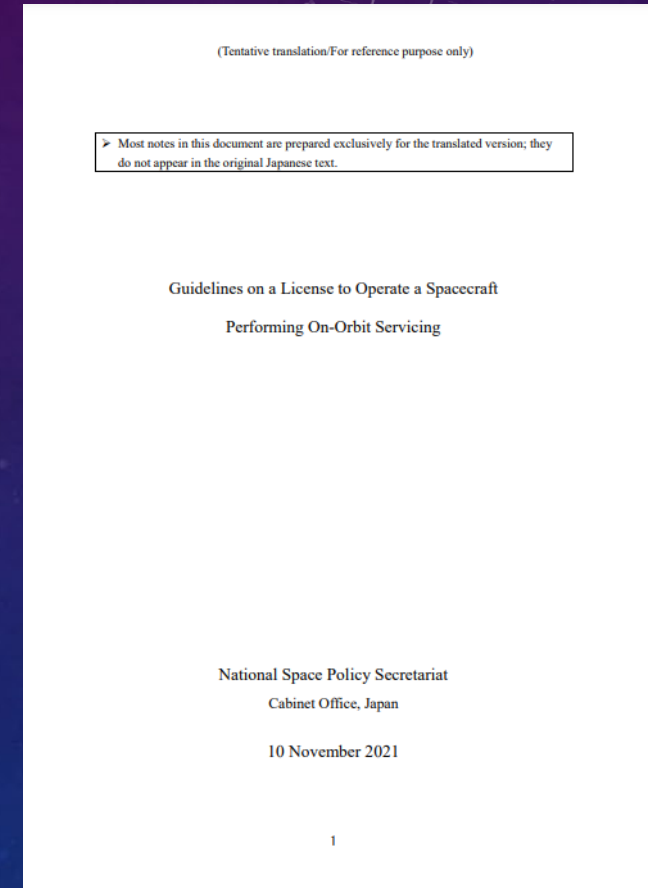
◆ National Space Agency

E.g., Support to monitoring organization

JAPAN'S OOS GUIDELINES

Chronology

- In November 2020, the Government of Japan's Inter-Agency Task Force on Space Debris decided to start studying the rules and regulations for on-orbit servicing (OOS) missions.
- In December 2020, the Sub-Working Group on On-Orbit Servicing was established and started its study.
- In May 2021, the Sub-Working Group delivered the report with the Rules for On-Orbit Servicing.
- In November 2021, based on the Rules, the Guidelines on a License to Operate a Spacecraft Performing On-Orbit Servicing (OOS Guidelines) were established and published.



OOS Guidelines
(Source: Cabinet Office, Japan)

INTERNATIONAL FRAMEWORK

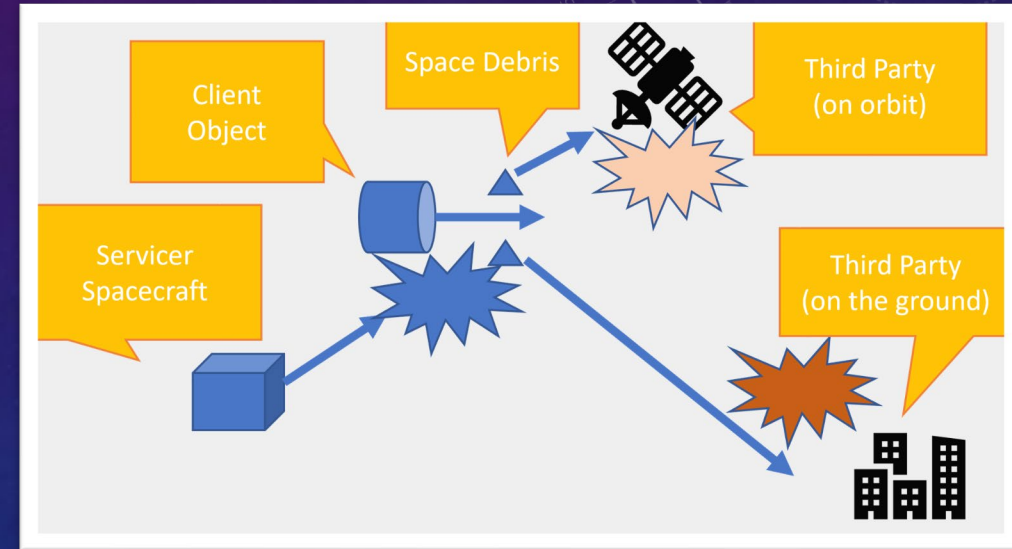
- Basic international legal framework
 - State Party to OST is responsible for its national space program.
 - Launching State(s) is(are) liable for damage to the third State caused by the space object launched.
 - State of registry obtains jurisdiction and right of control over the space object registered.
 - State of registry is equal to or included in the launching State(s).
- LTS Guidelines
 - Section A.3, A.5, B.1, B.4, B.8, B.10



UNCOPUOS
(Source: Ministry of Foreign Affairs of Japan)

RISK-BASED APPROACH

- Technical Aspects
 - The servicer should know the architecture of the client object to ensure safe operation throughout the mission.
- Legal Aspects
 - The stakeholders should understand the responsibility and liability to both of servicer spacecraft and client space object.
- International Relations
 - The rules should ensure safe and transparent OOS missions, and should be open.

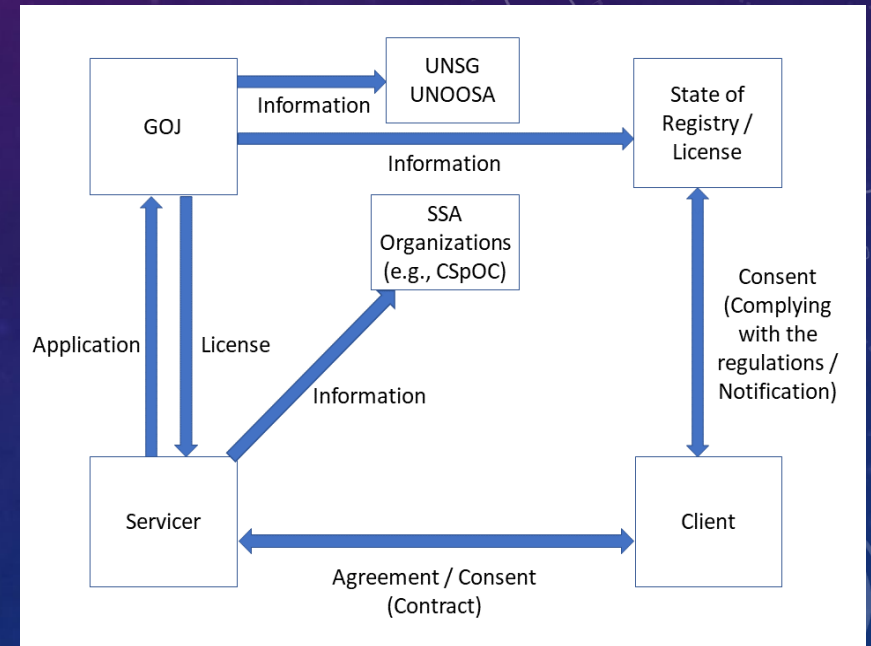


Possible Scenarios

OVERVIEW OF THE RULES

Framework of OOS

- The OOS mission should be conducted on the agreement between the servicer and the client or the consent from the client.
- The registration of the client object should be done.
- The client should comply with the rules of the State which registered or licensed the client object or notify the mission to that State.
- The servicer should provide the Space Situational Awareness (SSA) organization with the operation plan and other information.
- The servicer provide potentially affected entities in the case of malfunction or accident with the information necessary.



Framework of OOS

THANK YOU FOR YOUR ATTENTION!