



**SWF/ IFRI**

**Legal Challenges of OOS and ADR  
Liability: An Overview**

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# Overview

- Drivers for ADR and OOS from legal perspective
- Backdrop of international liability system
- Discussion of 'fault'
- Models for risk allocation and insurance
- Prerequisites for ADR + OOS missions





# I. Drivers

- ADR and OOS: essential tools in sustaining space activities
  - Balance of interests between all actors
  - Debris remediation as expression of ‘precautionary principle’
- Accompanied by inevitable risks
  - Models to be developed for risk allocation, taking traditional philosophy of space activities into account
  - Assumption of (own) risk; insurance coverage (?)
  - Cooperation subject to conditions conform to international law
- Notification and ‘informed consent’ of States
  - Art IX OST (protection of outer space); Art IV REG (registry details as indication of ‘sovereign’ rights over satellites)



## II. Legal Backdrop

- Heritage of 5 UN Treaties, notably OST, REG and Liability Convention LIAB
  - Provisions on conduct of space activities; duties of States
- Arts I, III OST
  - International cooperation and understanding; peaceful use
- Art VI OST
  - International State responsibility
- Art VII OST and LIAB
  - Launching state liable for damage caused by space object

\*ITU aspects not covered here

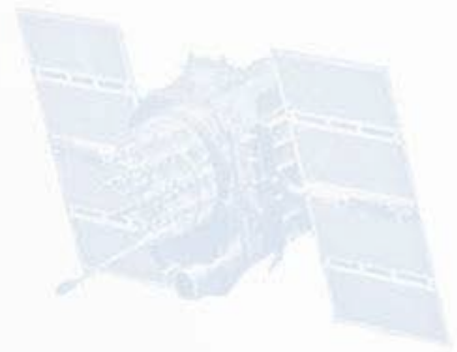
# III. Specifics of Fault Liability relevant to ADR



- No liability for damage to outer space environment
  - Absence of rules here; no ‘polluter pays’ principle
  - Only via national law (at licensing level; increasing impact of EU Directives on use of chemicals etc.)
- Absolute/fault liability dichotomy between damage on earth and in outer space Arts. II, III LIAB
  - Historical
- Fault liability for collisions in outer space, Art III LIAB
  - Damage from space object to a space object (+ persons)
  - Debris as space object, Art I (d) LIAB
  - Measure of fault?

## IV. Measure of Fault

- Definitions: *per* general ‘common’ law
  - Failure to maintain accepted level of ‘professional’ standard
  - Gross negligence clearer = willful, manifestly reckless conduct
- Difficulties with ‘fault’ in outer space
  - Technical recommendations, not binding, but relied on
  - IADC/ UN/ EU/ ITU Debris Mitigation Guidelines
  - State practice? Guideline terms cannot be ignored
- Time factor re guidelines, particularly as to state of the art?
  - Non-retroactivity of technical standards; parallels in tort liability
  - N.B. standards alone do not always dictate liability in law



## V. 'Fault' as seen through Calculus: Heralding a new light on liability for ADR?

- **Interpretation of fault by US Supreme Court:  $B < PL$** 
  - B** = burden of taking precautions
  - P** = probability that risk or collision will occur
  - L** = cost of injury (or liability)
- **Liability arises where burden (of debris removal/collision avoidance) is less than cost of injury, multiplied by probability of occurrence**
- **Where  $B \geq$  cost of injury, no liability**
  - See e.g. UK 2011 Impact Assessment, with probability calculations for collisions in LEO
  - $7.7 \cdot 10^{-6}$  = rare, but potential occurrence

## VI. Expediencies of Liability for Outer Space Activities and ADR: Forms of Dispute Resolution

- **Firstly**, international liability system not exclusive  
**Art XI.2 LIAB:** domestic courts are competent to hear disputes  
or: International arbitration
  - Applicable law likely to play decisive role *in casu*
- **Secondly**, a further expediency of international law
- State responsibility continues for outer space activities
  - Art VI OST
  - Presupposes national monitoring and control
  - **Possibly even duties to undertake ADR?**
  - Debris removal highly relevant for sustainability



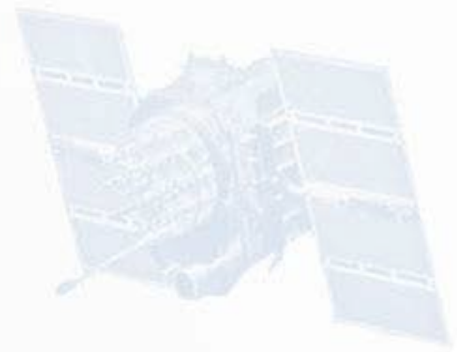
## VII. Models for ADR and OOS

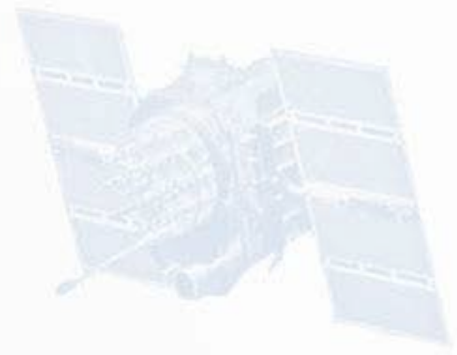
- For service contractors or client States: agreement/ acceptance by Agency, State or IGO of international liability
  - General exclusion of international state resp.+liability in outer space not possible
  - Unless inter-partes dedicated project model e.g. ISS
  - Assumption of ‘own risk’ preferred = risk lies where it falls
- Liability apportionment agreements; prototypes exist in field of launchers’ liability
  - E.g. Declaration by certain European Governments on the Launchers Exploitation Phase of Ariane, Vega, and Soyuz from the GSC 2007, entry into force 2009



## VIII. Commercial OOS

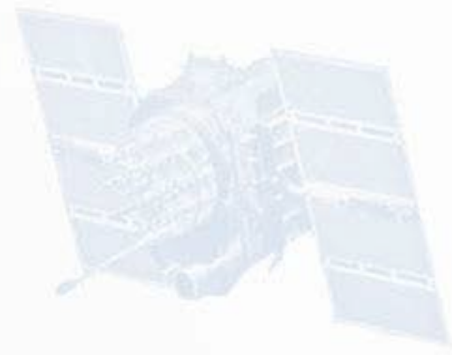
- Realistic concept, where ventures backed by acceptance of state or IGO external ,fault' liabilities as indicated
- Risk allocation between contract partners traditionally known in commercial sector, with liability waivers between parties and contractors
- No exceptions for gross negligence
  - National space laws
- Insurance? Mathematics of TPL?
- States and Agencies: coordinated re-entry management systems





## IX. Outlook

- Authorisation, Notification and Collateral risk
  - ADR Missions for plurality of states through service provider?
- Collateral risk: insurance and TPL?
- Process of consultation and notification
- Fault; status of guidelines: UNCOPUOS SubC working group D. Q re failure to
- Negligence if ADR not undertaken ?
- Concepts for fees and reward for successful missions



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