



Active Debris Removal – Legal Aspects

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ESTEC

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WHO WE ARE AT THE ECSL

- European Centre for Space Law (ECSL) - organisation set up by ESA in 1989 and located at HQ in the Legal Services department
- Main objective: **to promote and foster the development of space law interest and education throughout Europe** through conferences, industry and academic networking events, training courses for students, lawyers, insurers, policymakers, engineers etc.
- Over 150 Members in 2016



Slide 2

BACKGROUND TO ADR & THE LAW

- Increase in space activities and debris in LEO and GEO = **increased risk of damage and collisions (affecting future sustainability and increasing commercial risk to space assets)**
- Remediation should supplement on-going mitigation efforts
- Continuous technological development for ADR operations = **highlighting the need for greater inter-disciplinary discussion**
- More weight being given to the non-technical (**legal**, safety, **regulatory**, policy, cost-sharing/financial etc.) **obstacles** *and* possible **solutions**
- Are we **legally obliged to act to remove space debris?**



Long-Term Sustainability of Space Activities

Active Debris Removal – Legal Aspects



LEGAL DEFINITION

There is no generally accepted legal definition of 'debris' = debris is a 'space object'

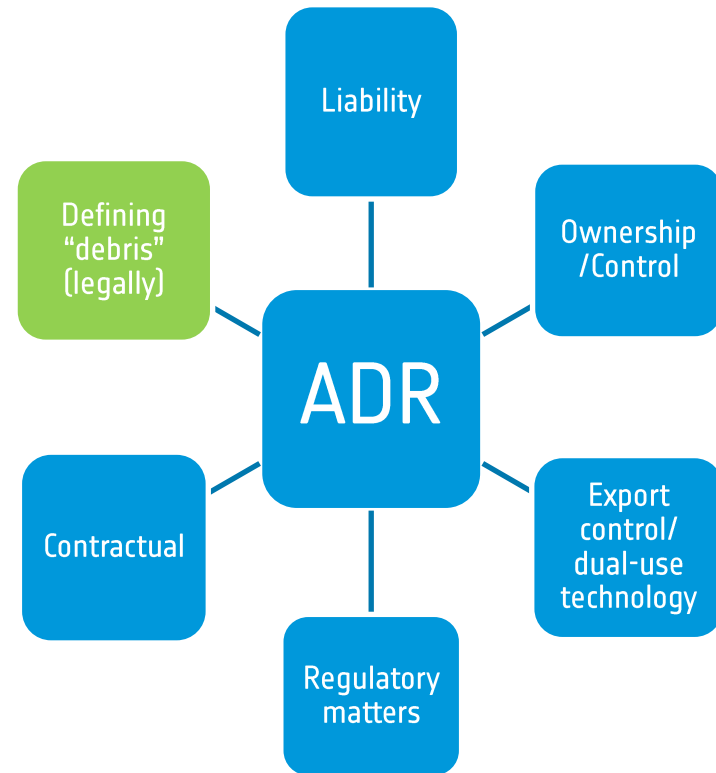
Functionality is not a determining factor

Issue?

- Difficulty in identifying (and justifying) a target as 'debris': **one State's "debris" could be another's hibernating 'capability'**

Solutions?

- Greater international cooperation
- Common criteria for the selection of objects for removal
- Increased SSA and information sharing cooperation
- **Space Traffic Management**



How do we recognise which objects can be removed in the first place? How do we choose which to remove?

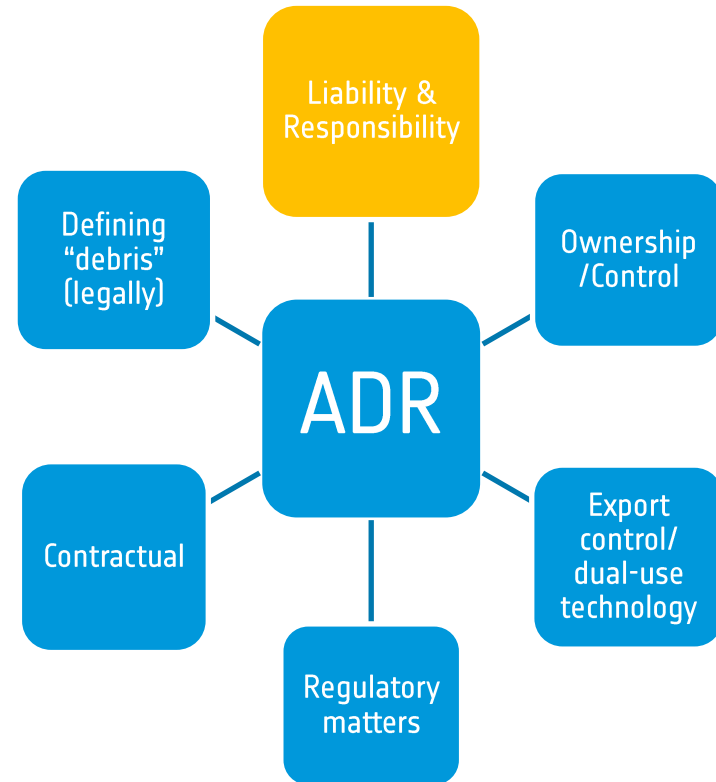
LIABILITY & RESPONSIBILITY

Responsibility: States are responsible for the activities of companies in space – required to authorise and continuously supervise activities

Liability: the ‘Launching State’ – causes damage in space (fault) or on Earth or in air (absolute)

A ‘Launching State’ does not stop being a launching State

- only the Launching State(s) can remove or refuse the removal (is the State always identifiable?)
- any third-party attempt to remove could be a breach of the Launching State’s sovereignty



**Who is responsible for the ADR space activity?
Who is/are liable if something goes wrong?**

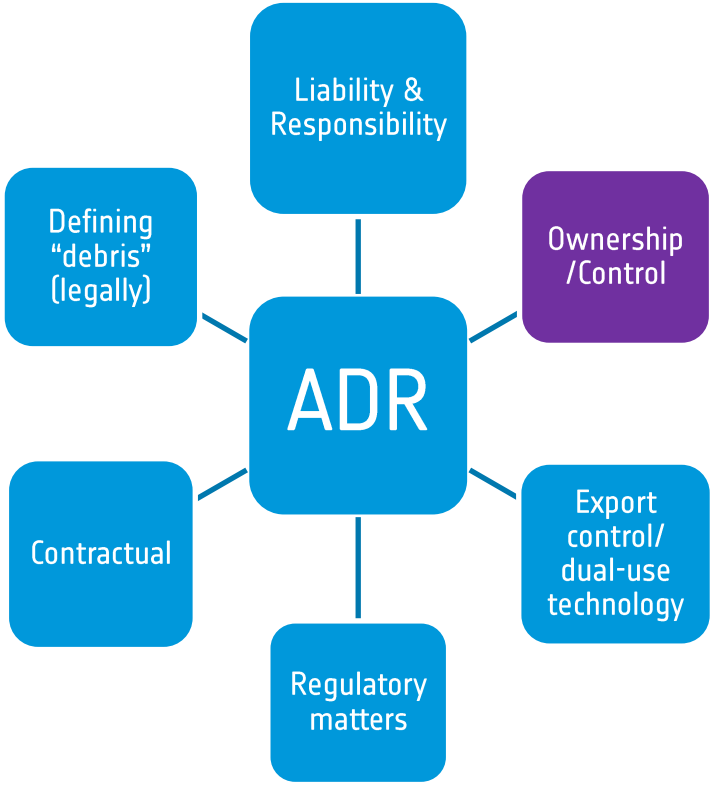
OWNERSHIP & CONTROL

Ownership over a space object (including debris) does not cease merely because the object is non-functional.

The State that registered the space object (and any subsequent debris) is entitled to **exercise jurisdiction and control** over the space object

- Practicality for ADR: the party wishing to remove the debris needs the consent of the **State of Registry** (but we do not always know who this is)

Abandonment and **Salvage** are not accepted concepts for space activities



How we do know who owns an object to be removed through ADR?

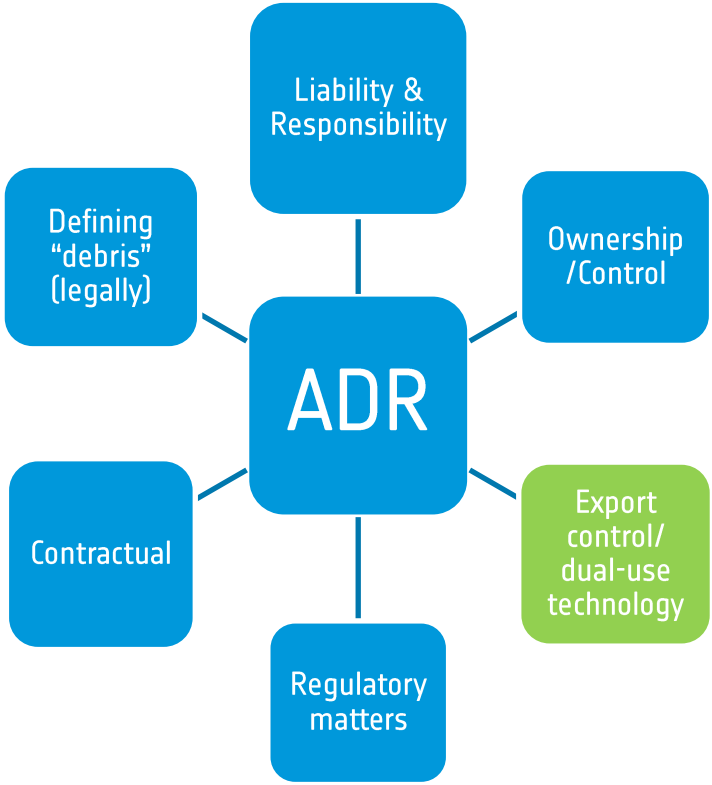
ADR & DUAL-USE

ADR technology – like other forms of space technology – may be of a **dual-use** nature

The technology may also have the potential to be (perceived as) a **weapon**

Compliance with all relevant **export control** and **technology transfer** laws and regulations is crucial – any ADR activity involving a US component would likely mean ‘export’ under ITAR

Need for **Transparency** and **Confidence-Building Measures (TCBM)** – sharing of knowledge, technique to be used, data, information, disclosure of purpose and international cooperation

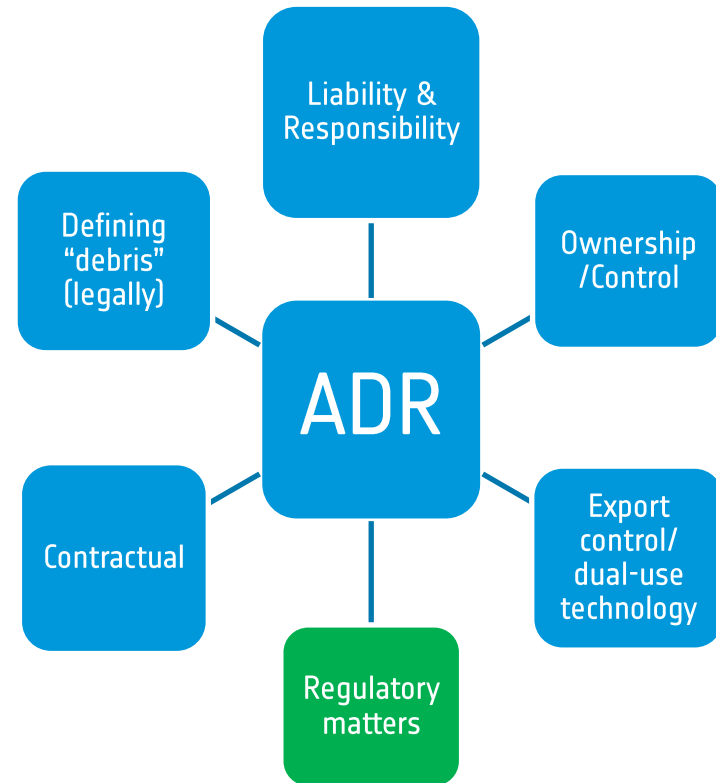


Could an ADR mission be perceived by other countries as a weapon?

REGULATORY

Regulatory: compliance with national regulations (including security regulations) and also regulations of agencies like ESA where appropriate:

- Seeking **authorisation** from the relevant national authority to carry out the activity and satisfying all criteria to obtain such autorisation:
 - **Providing insurance coverage against damage caused by ADR mission including third-party liability (TPL)**
 - But is there coverage on the insurance market for ADR – untested activity and difficult to quantify level of risk?



How do national regulations fit in with an ADR mission, and how to ensure compliance?

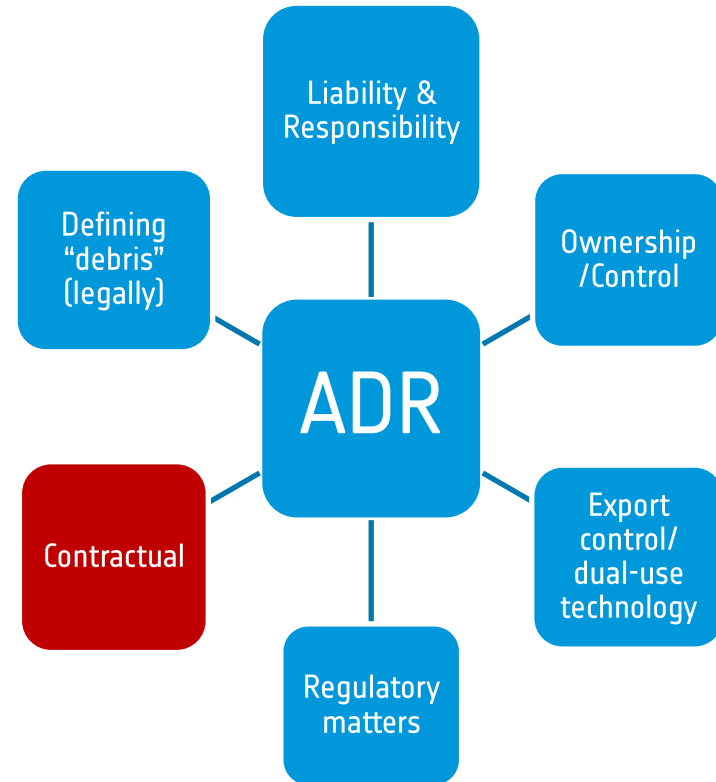
In addition to liability under international law, there is also **contractual liability** between parties

Debris may contain intellectual property, e.g satellite configuration, design.

Transmission of intellectual property information may be needed for ADR

How would a potential ADR mission be structured contractually?

- Public-private partnership (PPP?)
- What about financing?



When it comes to the mission, what are the key contractual aspects?

‘Much like waste management on Earth, cleaning up space junk through ADR will likely **lie somewhere between a public good and a private sector service.**

Taking an international co-operative approach can address many of these issues and be economically sustainable, **while also driving the creation of a proper set of laws, regulations, standards and best practices’**

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