



*Promoting Cooperative Solutions for Space Sustainability*

# **Overview of the International Security and Stability Challenges of On-Orbit Satellite Servicing and Active Debris Removal**

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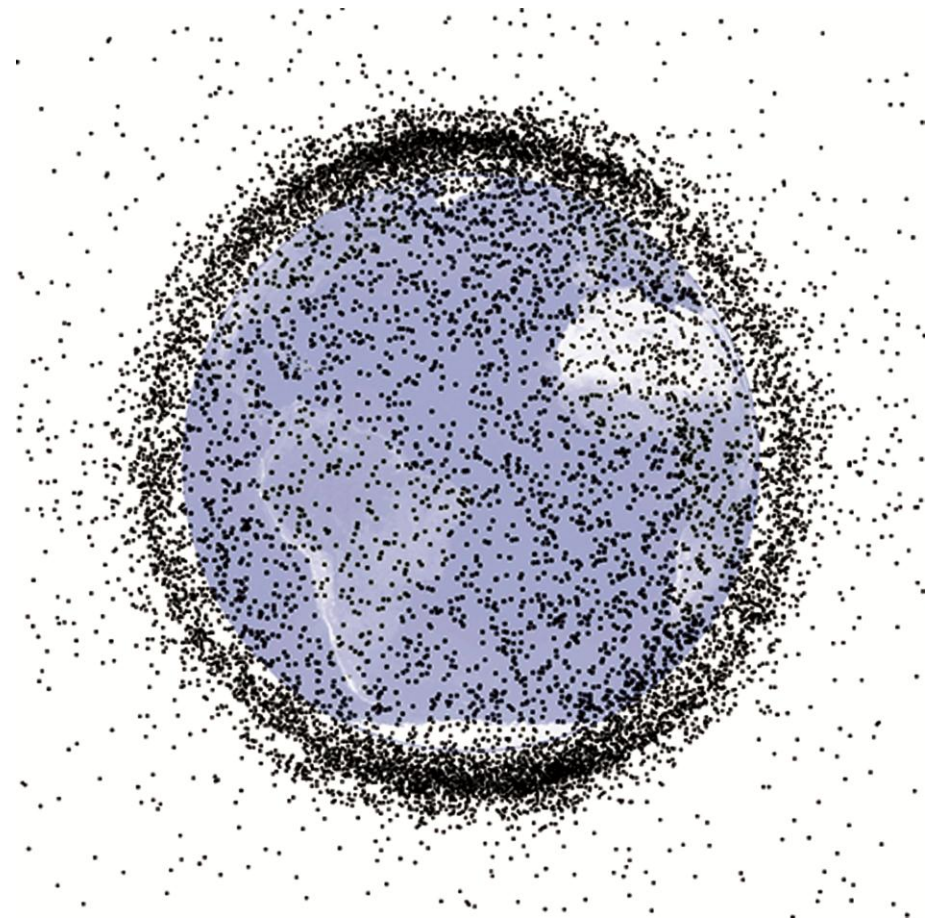
Secure World Foundation

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# Who is Secure World Foundation?

- Private operating foundation
- Focused on promoting *cooperative solutions to space sustainability*
- **Space sustainability: ensuring that we can continue to use space in the long-term**
- Sustainability threatened by an increasingly crowded space environment



# RPO and Space Sustainability

- On-Orbit Servicing (OOS) and Active Debris Removal (ADR) are categorized as Rendezvous and Proximity Operations (RPO)
- **OOS and ADR are not just technical problems**
  - **Political, legal, and economic concerns are deeply embedded in the concepts and will affect mission success**
- For RPO to contribute to, and not undermine, space sustainability, non-technical issues must be addressed

Central Question:  
How do we address these non-technical challenges *now* so that they do not hinder technological development or undermine sustainability?

# Non-technical Challenges of OOS/ADR

- Political and security challenges
  - Dual use nature of technology
  - Potential malicious or hostile use
  - Potential to disrupt strategic stability
- Legal challenges
  - Liability
  - No definition of “space debris”
  - Protecting sensitive information and intellectual property
- Economic challenges
  - Cost/benefit analysis
  - Risk and insurance premiums
  - Little economic incentive to clean up debris

# Overcoming the Challenges

- One way forward:  
*responsible use of space*
  1. **Define** responsible behavior
  2. Pursue **transparency and confidence building** measures
  3. Improve and share better **space situational awareness**





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# THANK YOU

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