



Promoting Cooperative Solutions for Space Sustainability

Space Debris and Traffic Policy

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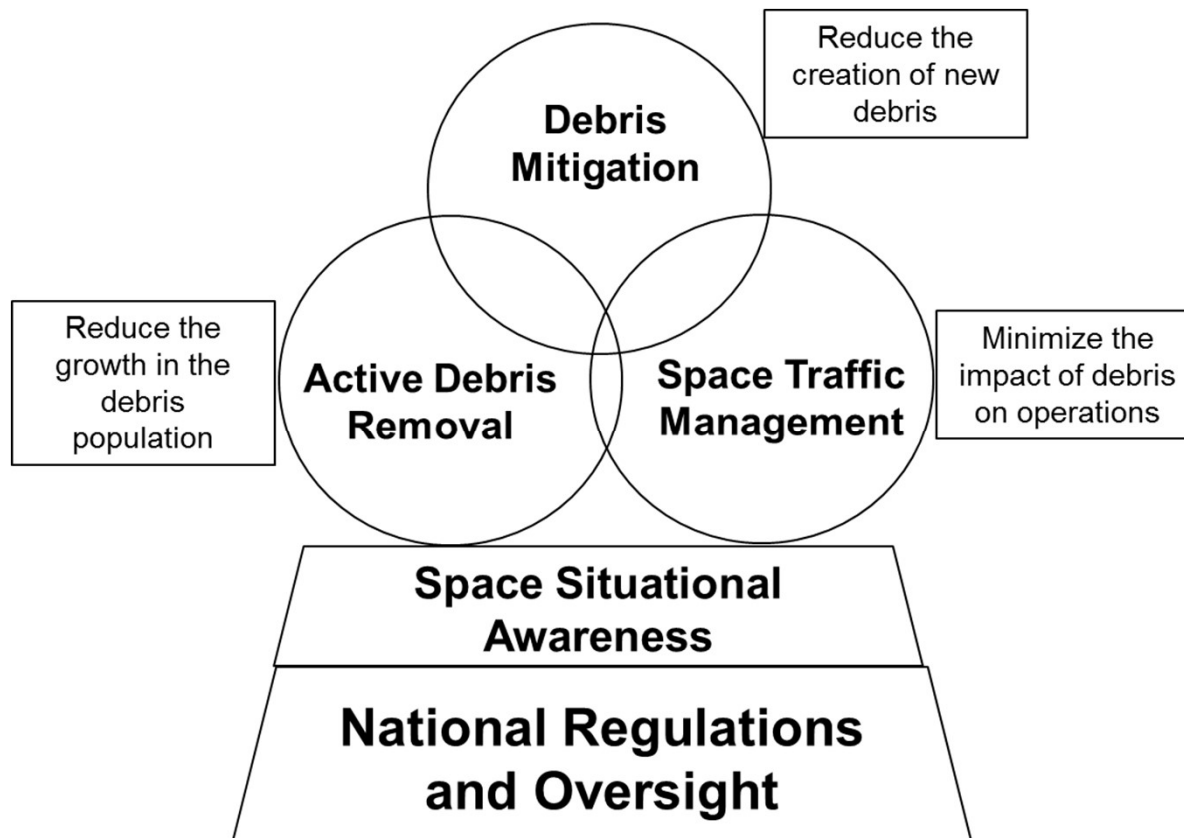


What is public policy?

- “The principled guide to action taken by the administrative executive branches of the state with regard to a class of issues in a manner consistent with law and institutional customs” (Wikipedia)
- “The public and its problems” (Dewey 1927)
- “How issues and problems come to be defined, and how they are placed in the political and policy agenda” (Parsons, 1995)
- “How, why, and to what effect governments pursue particular courses of action or inaction” (Heidenheimer et al, 1990)








Framework for space sustainability





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Space debris in U.S. national space policy

Year	President	Policy Directive	Implementation
1988	Ronald Reagan	Minimize creation of space debris in tests, experiments, and systems	
1989	George HW Bush	+ Encourage other countries to adopt space debris minimization policies	
1996	Bill Clinton	++ Develop design guidelines for space debris minimization, and take a leadership role in promoting international adoption	
2006	George W Bush	+++ Follow national orbital debris mitigation standards, and incorporate into licensing of commercial satellites	
2010	Barack Obama	++++ Preserve the space environment, foster development of space collision warning measures, and research debris removal technology	
2020	Donald Trump	+++++ Develop and maintain space flight safety standards and best practices to coordinate space traffic	?



Air-space interface

- Minimize the impact of space operations on aircraft operations during launch and re-entry
- Co-operating spacecraft and aircraft (sub-orbital tourism, air-launch spacelift)

Orbital congestion

- Prevent collisions between space objects
- Manage highly congested orbital altitudes
- Active control of RPO with crewed space objects

Oversight of private sector space activities

- Article VI “authorization and continuing supervision” of private sector space activities
- Link between regulation/licensing and monitoring of actual activities/verification



Obama Administration

- Started interagency discussions on STM in 2010
- Debate over Dept of Commerce vs Dept of Transportation
- Established baseline definitions & outline, but did not come to a decision (but leaned towards DoT)

Trump Administration

- Halted DoT pilot program, restarted interagency discussion
- Came to consensus on Space Policy Directive 3 (Jun 2018)
- Components largely same as under Obama, but implemented by DoC instead of DoT

Biden Administration

- ????

Congress

- Approved \$10M for DoC pilot program in FY21, no decision on increased authorities



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Industry best practice efforts

Space Data Association

- Not-for-profit geared at sharing owner/operator data
- Enhanced conjunction assessments
- Radio frequency interference resolution

Space Safety Coalition

- 40+ satellite operators who have agreed to voluntary practices beyond baseline requirements

CONFERS

- 40+ companies working on satellite servicing
- Developed principles and recommended practices
- Baseline for new ISO standard (24330) currently in work



Other national efforts

New Zealand

- Contract with LeoLabs to provide SSA data on satellites licensed by NZ

Europe

- (it's complicated)
- ESA and EU efforts to develop/improve SSA
- Lots of [discussions](#) on what should be done (space traffic *coordination*?)
- Five studies launched in late 2020/early 2021

Japan

- Significant investment into improving SSA (ground- and space-based)
- Aligning with the US on SPD-3 and data sharing

Others

- Many countries looking at improving SSA, unclear about “STM”



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UN Committee on the Peaceful Uses of Outer Space

Scientific and Technical Subcommittee

- Recently finished 8-year discussion on Guidelines for Long-Term Sustainability of Space Activities (LTS)
- 21 guidelines endorsed by 95+ countries
- Touch on debris mitigation, avoiding collisions, SSA sharing, national policy/regulation
- Russian proposal for UNOOSA to maintain database of space objects

Legal Subcommittee

- Initial discussions on STM
- “Exchange of views” by countries, but no clear consensus or workplan



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Thank you!
Questions?

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