Space Debris and Traffic Policy

Brian Weeden, Ph.D.
Director of Program Planning
Secure World Foundation
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)
<table>
<thead>
<tr>
<th>Year</th>
<th>President</th>
<th>Policy Directive</th>
<th>Implementation</th>
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</thead>
<tbody>
<tr>
<td>1988</td>
<td>Ronald Reagan</td>
<td>Minimize creation of space debris in tests, experiments, and systems</td>
<td>✅</td>
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<td>1989</td>
<td>George HW Bush</td>
<td>+ Encourage other countries to adopt space debris minimization policies</td>
<td>✅</td>
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<td>1996</td>
<td>Bill Clinton</td>
<td>++ Develop design guidelines for space debris minimization, and take a leadership role in promoting international adoption</td>
<td>✅</td>
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<td>2006</td>
<td>George W Bush</td>
<td>+++ Follow national orbital debris mitigation standards, and incorporate into licensing of commercial satellites</td>
<td>✅</td>
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<td>2010</td>
<td>Barack Obama</td>
<td>++++ Preserve the space environment, foster development of space collision warning measures, and research debris removal technology</td>
<td>❓</td>
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<td>2020</td>
<td>Donald Trump</td>
<td>+++++Develop and maintain space flight safety standards and best practices to coordinate space traffic</td>
<td>?</td>
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Components of STM

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
U.S. policy on STM

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
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
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”
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
Thank you!
Questions?

bweeden@swfound.org