Committee on the Peaceful Uses of Outer Space

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The Space Security Index

• Provides objective and fact-based research to promote transparency and confidence in space activities

• Supports the development of policy to ensure secure access to space for all
“The secure and sustainable access to and use of space, and freedom from space-based threats”
Space Security Indicators

1. The Space Environment
2. Space Situational Awareness
3. Laws, Policies, and Doctrines
4. Civil Space Programs and Global Utilities
5. Commercial Space
7. Space Systems Resiliency
8. Space Systems Negation
Operating in space

Themes:

• *Physical space environment*

• *Normative and regulatory framework for space activities*

• *Growing number and diversity of actors*

• *Space-based military applications*
The Space Environment

- The Physical Space Environment
- Space Situational Awareness

Image Source: Orbital Debris Quarterly Newsletter, NASA
The Space Environment

Key Developments in the *Space Security Index 2012*:

- Catalogued space debris population increases by 7.8 percent
- Orbital debris continues to have a growing impact on operational spacecraft
- The U.S. continues to expand SSA Sharing program
- International effort to track and reestablish contact with Russian Phobos-Grunt spacecraft
The Normative Environment

Laws, Policies, and Doctrines

Existing normative architecture for space activities is *insufficient*.

Different Approaches:
- National vs. Multilateral
- Legally binding vs. non-binding

➢ Not necessarily mutually exclusive
Key proposals:

- **Code of Conduct for Outer Space Activities**
- **PPWT**
- **Canada’s proposed pledges to:**
  a. Ban the placement of weapons in space,
  b. Prohibit the test or use of weapons on satellites so as to damage or destroy them, and
  c. Prohibit the use of satellites themselves as weapons.
The Normative Environment

Key Developments in the *Space Security Index 2012*:

• U.S. National Security Space Strategy released

• The CD could not agree on a Program of Work during 2011

• Terms of reference for COPUOS Working Group on Long Term Sustainability of Outer Space Activities agreed

• International Code of Conduct for Outer Space Activities proposed by the EU continues to receive mixed support

• U.S. confirms engagement with Group of Government Experts for Transparency and Confidence-Building Measures in Space
Number and diversity of space actors

- **Access** to outer space is growing
- **New space actors** emerging
- Barriers to entry are sharply decreasing

- **But**: Limited resources (e.g. orbital slots, RF spectrum)
Key Developments in the *Space Security Index 2012*:

- LightSquared telecommunications plan interferes with GPS signals in the U.S.
- Satellite navigation systems around the globe continue to evolve.
- Increasing number of cooperation agreements on space activities.
- Despite predictions of downturn, satellite industry positioned for continued growth.
- Space Data Association reaches full operational capability.
Space-based Military Applications

- **Uses:**
  - Reconnaissance
  - Surveillance
  - Navigation
  - Intelligence

- But: NO Space-based Space Weapons used to date
Offensive/Defensive space capabilities are NOT ONLY related to systems in orbit.

They include the entire structure of space and terrestrial systems:
- Orbiting satellites
- Ground stations
- Data and communications links
Key Developments in the *Space Security Index 2012*:

• Canada joins Wideband Global SATCOM (WGS) Project
• Chile’s first military intelligence satellite is launched
• Rapid Attack, Identification, Detection, and Reporting System (RAIDRS) Block 10 nears initial operational capability
• Programs under way to mitigate risk of cyber attack
• Jamming incidents and capabilities continue to proliferate
SSI Project Partners

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