



Summit for Space Sustainability

Washington, DC, 25 June 2019

Militarization and Potential Conflict in Space

Jana Robinson, Ph.D.

Space Security Program Director

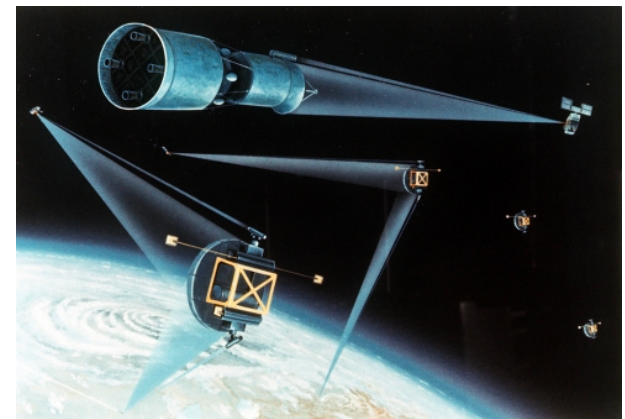
Prague Security Studies Institute (PSSI)

Presentation Overview

1. Global Counterspace Dynamic
2. Space Security in the Era of Hybrid Operations
3. Economic and Financial Operations as a Counterspace Threat
4. Key Challenges Ahead
5. Conclusion

1. Global Counterspace Dynamic

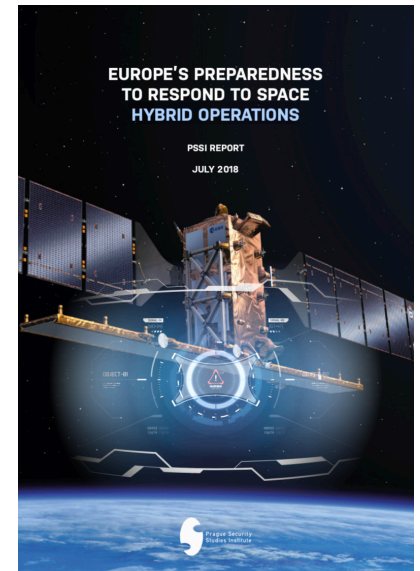
- Driven by China – Russia – U.S. rivalries
- Other nations seeking space capability for national security reasons (e.g. India, Israel, Japan, South Korea, etc.)
- Non-reversible, destructive ASAT capabilities are among the most prominent concerns
- “Grey zone” spectrum of threats associated with deliberate, reversible actions by state actors which are asymmetric in their knock-on effects
- Heightened concern over terrestrial disputes cascading into space due to a deteriorating geopolitical environment among the major space powers.



Directed Energy Weapon - an Artist Depiction (Credit: U.S. Defense Department)

2. Space Security in the Era of Hybrid Operations

Space Hybrid Operation	Examples
Directed Energy Operations that May Result in Space Debris	Low-Power Laser Dazzling or Blinding High-Power Microwave (HPM) or Ultrawideband (UWB) Emitters
Orbital Operations that Generally Do Not Result in Space Debris	Space Object Tracking and Identification; Rendezvous and Proximity Operations (RPO)
Electronic Operations	Jamming (Orbital/Uplink, Terrestrial/Downlink) Spoofing
Cyber Operations	Attack on satellite or ground station antennas Attack on ground stations connected to terrestrial networks Attack on user terminals that connect to satellites
Economic and Financial (E&F) Operations	Investments in targeted country's space infrastructure for purpose of influence/control. Provision of subsidized loans, launch services, ground stations, GNSS services, etc. for a targeted country's space system(s)



3. Economic and Financial Operations as a Counterspace Threat



- Chinese Transactions
- Russian Transactions
- China/Russia Transactions

PSSI's Global Map of Chinese and Russian Space Transactions (as of March 31, 2019)

4. Key Challenges Ahead

- Inherently dual-use nature of most space capabilities (even seemingly benign civilian technologies can have counterspace applications)
- Temptation of state actors to exploit asymmetric space vulnerabilities
- Deployment of capabilities that disrupt or deny space benefits temporarily and reversibly
- Ambiguous attribution concerning hostile actions/activities
- Proliferation of space-related threats stemming from technological innovations
- Competing models for space partnering arrangements among state actors
- Cyber threats and economic and financial (E&F) predations in particular could cause major disruptions in the regional balance of power, as well as global space security.

5. Conclusion

- Absent active diplomacy that enhances transparency and promotes confidence, incidents and even conflict involving space domain are likely and fairly near-term
- Behavioral norms and best practices can serve as a rules-based beacon that guides a future space traffic management regime
- Policies should focus on: greater awareness of the multitude of threats; resilient architectures; creative deterrence options; response/crisis management procedures; secure incident reporting between public and private actors; capacity-building; and sustainable space partnerships.