



## ISSUE PAPER

# U.S. Must Protect Critical Space & Cyber Infrastructure

### AIA RECOMMENDATIONS

- Space systems are critically interwoven into the fabric of everyday American life. Both federal and commercial space systems must be treated as critical infrastructure and a national priority for protection. In addition, development of offensive space technologies by foreign competitors demands increased funding for space protection and space situational awareness (SSA) efforts.
- Recognize and fully support the important role of offices such as the joint Air Force and National Reconnaissance Office Space Protection Program in developing and advancing a national space protection strategy.
- International data sharing for space protection should become a priority. Government-industry partnerships should be strengthened to develop a robust national space protection and SSA policy and strategy that is implemented to monitor and protect critical space assets.

### BACKGROUND

Space support has become an essential element in virtually all aspects of American life. Our National Command Authorities depend upon satellite communications and sensors. Without space systems, our nation's ability to detect and respond to offensive ballistic missile launches from nations like Iran or North Korea would be minimal. Deployed servicemembers on isolated battlefields in Afghanistan and elsewhere rely on secure space systems for mission success. Emergency responders use space-based systems for communication, position, and navigation. Agriculture and construction depend upon precise positioning from GPS satellites. Communications via cellular and other means, ATM and other financial transactions, commercial and private transportation, and countless other activities rely, either directly or indirectly, upon space systems for their continued efficient operation. Disruption of the space systems upon which these activities rely would have a devastating impact upon our nation.

In January 2007, the Chinese used a ballistic missile to destroy an aging weather satellite. This anti-satellite (ASAT) test demonstrated the very real ability of a foreign power to attack and destroy space assets, and resulted in a dangerous debris cloud. In addition, the February 2009 collision of a commercial U.S. satellite and Russian satellite showed that space systems not only face disruption from intentional attack, but are also at risk from unintentional events in an increasingly crowded environment. Today, all space systems face diverse and evolving threats including unintentional or intentional satellite collision, cyber attack, radio-frequency jamming, lasing, co-orbital ASAT, and nuclear detonation that could severely degrade and disrupt support of critical national security and economic activities.

Unfortunately, past efforts to improve space protection and SSA have not been a high priority. The complexity of space systems and their environment poses unique challenges in identifying potential threats and attributing system disruptions and failures to a specific cause. The government must develop, fully fund, and implement a comprehensive strategy to provide adequate SSA and space protection. Protection of these systems must become a national priority to ensure that the space systems upon which our national security and economy relies continue to operate without disruption.

### KEY POINTS

- Increased Threat Environment. Nations such as China, Russia, and Iran continue to develop and modernize their space systems. Over 60 nations are engaged in space efforts and tens of thousands of man-made objects orbit the Earth. In such a crowded environment, investments in sensors, tracking, threat assessment and attribution, and other efforts – including information sharing with government, industry, and international partners – are needed.
- Loss of Space Assets Would be Devastating. Critical National Command Authority, warfighter, intelligence, civil, and commercial activities depend upon space support, both government and commercial, to operate successfully. Routine and time-critical activities from detection and response to ballistic missile attack, to local emergency team responses, to personal communications and ATM use would be crippled without support from space systems. Space support has become inextricably interwoven into the fabric of virtually every aspect of life in the U.S. and much of the world.
- Involve Industry. The U.S. space industry is capable of providing innovative solutions to space protection and SSA. As national leaders assess threats to space assets and consider plans to protect these assets, it will be important to maintain a strong dialogue between government and industry.