Written Statement of

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Hearing on
Weaponizing Space:
Is Current U.S. Policy Protecting Our National Security

Before the
Committee on Oversight and Government Reform
Subcommittee on National Security and Foreign Affairs
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Opening

Chairman Tierney, Ranking Member Shays, members of the Committee, on behalf of the Satellite Industry Association (SIA)[1], I would like to thank you for holding this hearing today on space and national security issues. It is my goal today to provide you with an overview of the critical role of satellites in our global economy, discuss briefly the role they play in support of our military and first responders, and lastly focus on the importance of space situational awareness and being a responsible actor in space.

The SIA is a U.S.-based trade association which represents the commercial satellite industry including satellite operators, service providers, manufacturers, and ground equipment suppliers throughout the world. SIA represents the consensus and unified voice of the U.S. satellite industry on policy, regulatory, and legislative issues affecting the satellite business. As such, SIA plays a very active role in the ongoing dialogue between industry and the Defense Department on satellite protection and reliability issues.

Whether broadcasting television programming to viewers throughout the world; enabling the US military to conduct large and small-scale operations across large distances, or providing communications to first responders during the 2005 Hurricane Season or in response to the recent tornadoes in Greensburg, Kansas, satellites are there.

Today, the commercial satellite industry offers a wide variety of services and applications to its customers, which among others include: broadcast and cable telecommunications companies, television networks, financial institutions, major retailers, utilities, emergency personnel, first responders, schools, hospitals, Internet service providers (ISPs), consumers, and Federal, state, and local government agencies.

Critical to Economy

Today, satellites permeate our every day lives and contribute over $106 billion to the global economy. Satellites provide direct to home television and digital audio radio services to over 30 million direct-to-home television subscribers throughout the United States and over 89 million worldwide.

Today, commercial satellites support daily activities such as truck fleet management, credit card validations, pay-at-the-pump services, ATM withdrawals, high-speed Internet, traffic and weather reports, and almost all television and radio distribution.

[1] SIA Executive Members include: Arrowhead Global Solutions Inc.; Artel Inc.; The Boeing Company; Datapath, Inc., The DIRECTV Group; Globalstar, Inc; Hughes Network Systems LLC; ICO Global Communications; Integral Systems, Inc.; Intelsat, Ltd.; Iridium Satellite LLC; Lockheed Martin Corp.; Loral Space & Communications Inc.; Mobile Satellite Ventures LP; Northrop Grumman Corporation; SES Americom, Inc.; and TerreStar Networks Inc.; and Associate Members include: ATK Inc.; EchoStar Satellite LLC; EMC Inc.; Eutelsat Inc.; Inmarsat Inc.; IOT Systems; Marshall Communications Corp.; SES New Skies; Spacecom Corp.; Stratos Global Corp; SWE-DISH Space Corp; and WildBlue Communications, Inc.

In addition, satellites systems are often utilized for their unique ability to easily access remote locations.

In rural areas where terrestrial based communications solutions do not reach all residents -- satellite broadband, satellite television, satellite radio, and a host of other satellite services provide consumers and businesses with a wealth of voice, video, and data services and applications they otherwise would not have access to from terrestrial providers.

Furthermore, in areas where terrestrial services are available, satellite services give consumers all the benefits of competition, including greater diversity of service offerings, incentives for improving service quality, and downward pressure on pricing.

Satellites can also interconnect terrestrial networks in the event that those networks become unavailable or congested, allowing traffic to be re-routed and thereby increasing overall end-to-end communication availability. Satellite systems are flexible and they can quickly and cost-effectively provide surge capacity on demand to businesses and consumers.

Critical to Homeland Security

The national and homeland security communities also rely on satellites for critical activities, such as direct or backup communications, emergency response services, continuity of operations (COOP) and continuity of government, military support, and intelligence gathering.

Incorporating satellite technology into overall network architectures for primary or backup communications provides for transmission media diversity, system redundancy, and increased communications resiliency.

Here are a few examples of US Government agencies using commercial satellite communications for their primary or backup communications solution;

- *Federal Emergency Management Agency (FEMA)* relies heavily on Fixed Satellite Services (FSS) and Mobile Satellite Services (MSS) for daily use and during emergencies.
- *The Department of State (DOS)* relies heavily on commercial satellites to transmit voice, data, and video communications.
- *White House Communications Agency (WHCA)* uses commercial satellite communications systems extensively to support the President and Vice President.
- *Transportation Security Administration (TSA)* and their Federal Air Marshals use satellite communications while in-flight to communicate with staff on the ground.[2]

[2] NSTAC Satellite Task Force Report, March 2004

- *United States Coast Guard (USCG)* uses commercial SATCOM for ship-to-ship and ship-to-shore communications and for container security and tracking.
- *Nuclear Regulatory Commission (NRC)* uses SATCOM for monitoring of the status of the nuclear assets and voice communications for field personnel.
- *The Department of Health and Human Service (HHS)* is a heavy user of fixed and mobile satellite services. Specifically, the HHS command center uses satellites to back up its data networks.
- *The Federal Bureau of Investigation (FBI)* maintains satellite phones in every field office;

And there are many, many more examples.

As we all know, satellite communications have also played a critical role during the response to each of the natural and man-made disasters we have experienced in recent years.

Following the terrorist attacks of September 11th when New York City's terrestrial communications networks were damaged and overloaded, satellite communications easily maintained connectivity and satellite equipment was quickly deployed to meet urgent needs.

In 2005, satellite communications provided a lifeline for aid workers and victims in the remote islands of the Indian Ocean following the Asian Tsunami and in the earthquake-desolated towns and villages of Pakistan. In response to Hurricanes Katrina and Rita and the recent tornadoes in Kansas, satellite communications once again proved their essential value when all other forms of communication were wiped out.

In many of these affected areas, satellites provided the ONLY source of communications in the hours, days, and weeks following these natural and man-made disasters.

Organizations using satellite communications ranged from first responders at the federal, state and local government agencies to individuals, schools, churches and local relief groups. Small businesses such as retail gas stations and convenience stores, and larger businesses such as insurance companies, financial institutions, and news teams also used satellites to communicate when all other means of communications failed.

Critical to National Security

Military forces are perhaps the most dependent upon satellite communications systems to access essential information services to support land, sea, air, and space operations. The DoD currently uses military satellite communications (MILSATCOM) and commercial satellite communications to meet its global deployed telecommunications requirements.

Unmanned Aerial Vehicles (UAVs), such as the Predator and Global Hawk, are heavy users of commercial satellite bandwidth. Other bandwidth-intensive activities, such as

secure video teleconferencing and encrypted command and control operations, are also supported by satellite communications.

The Army's Blue Force Tracking program uses low-cost satellite links to provide battlefield situational awareness directly to soldiers and commanders, improving the effectiveness of distributed teams and greatly reducing the potential for friendly-fire incidents.

The Armed Forces Radio and Television Service provides news and morale programming to our troops around the globe via satellite. Telemedicine via satellite puts the resources of world-class trauma specialists and surgeons at the disposal of medical teams battling minutes to save lives in the field.

As a result of these services, the DoD has steadily increased its use of commercial satellites and services to support a multitude of military operations. DoD estimates that commercial satellite systems provided over 80 percent of the satellite bandwidth supporting Operation Iraqi Freedom and accounts for over 55 percent of all allied communications in Iraq today.

Industry-Government Cooperation

Given this reliance on commercial satellite communications, during the last 5 years the satellite industry has spent thousands of hours and millions of dollars working with the government to improve the performance, security, and reliability of our satellite infrastructure.

These activities are being coordinated both domestically and with allied governments through what is called the Commercial Satellite Mission Assurance Working Group (MAWG). Through the MAWG we meet on a regular basis with representatives of the Combatant Commands, Military Services, and Defense Agencies as well as the US State Department, Federal Communications Commission, Department of Commerce, NASA, the Intelligence Community, and representatives of allied governments.

The Mission Assurance Working Group focuses on the following issues for cooperation:

- Information Sharing between DoD and Industry
- The Development of Protocols for Responding to Jamming or Purposeful Interference of Commercial Systems
- Integration of the Commercial Satellite Industry into Government Training Exercises and War-Games, and perhaps most importantly;
- Space Situational Awareness

With the expansion of government reliance on commercial satellite operations in space, the industry has had to develop new tools to avoid physical or electronic interference in space. The satellite operations centers at our companies routinely coordinate and cooperate with each other, and with the US and allied governments to ensure that routine

maneuvers are safe and that we can all communicate to quickly recover from critical anomalies.

A key piece of this coordination effort is currently in jeopardy however.

Today, and for the past 3 years, our companies have used space surveillance data provided by Air Force Space Command's Commercial and Foreign Entities (CFE) pilot program to avoid collisions with other natural or man-made objects in space.

Commercial satellite operators are unable to replicate the space tracking capabilities that the US Air Force provides based on its own surveillance necessary to protect government systems, and therefore we are unable to collect this vital information on our own. This CFE program is currently on a list of unfunded priorities in the DoD budget. We urge the Congress to fully fund the CFE program at the requested $2 million level and ensure we are all able to continue safe operations in space.

In addition, as a result of the experience satellite operators have gained working together and with the Air Force, through the CFE program, we feel that it is time to propose an expanded level of cooperation and mutual assistance regarding the conduct of activities in space.

Over the last 18 months, our companies have worked closely with the US Government to develop a series of "best practices" to reduce the chances of orbital collisions and close approaches between commercial satellites and US Government satellites.

Our recommendations for best practices include;

- All space faring governments should continue to make investments in the capabilities and technologies necessary to provide adequate space situational awareness to increase the safety of all space operations.

- Countries should share space surveillance data to the maximum extent possible, after due consideration to national security and economics.

- With respect to the US, we believe that the US Air Force should fully implement the congressionally mandated CFE program. The program should include:
    - Launch support
    - Conjunction Assessment
    - End-of-life/Reentry Support
    - Anomaly Resolution
    - Emergency Services, including close approach deconfliction

- Responsible operators should follow the IADC guidelines on debris mitigation.

- Operators should provide timely notice of launch and related orbital insertion activities.

- A requirement for consultation if an operator has reason to believe that a spacecraft operating under their supervision might interfere with another operator's space activities.

- A requirement for consultation when debris and other uncontrolled objects result from an operator's activities or experiments in outer space

Closing

In closing, commercial satellites systems play a critical role in the economy, national security, and disaster response capabilities – in short satellite systems represent a critical infrastructure for the United States, its allies and its trading partners.

The commercial satellite industry is fully focused on reducing potential vulnerabilities to our systems and, further, we are working pro-actively with the US and allied governments to establish best practices to promote safe and responsible operations.

Improving the sharing of information, coupled with the inclusion of commercial satellite communications into the DoD's Transformational Communications Architecture, will guarantee better service, increase security, and ensure availability. Such a partnership is in the long-term interests of our military, our first responders, and our citizens.

Mr. Chairman, thank you again for the opportunity to testify today on behalf of the Satellite Industry Association. I look forward to answering any questions.