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THE SENATE ARMED SERVICES COMMITTEE

STATEMENT OF

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**Committee on Armed Services**

Chairman Nelson, Ranking Member Sessions, and Members of the Subcommittee, I am pleased to join General Shelton, Dr. Zangardi, Mr. Winokur, Lieutenant General Formica, and Ms. Chaplain to testify on the Department of Defense space program and policies. When Ambassador Greg Schulte testified here a year ago, the Department, together with the Office of the Director of National Intelligence, had just released the National Security Space Strategy. Today, I am pleased to discuss our progress in implementing that strategy.

U.S. space capabilities allow our military to see with clarity, communicate with certainty, navigate with accuracy, and operate with assurance. Maintaining the benefits afforded to the United States by space is central to our national security, but the evolving strategic environment increasingly challenges U.S. space advantages. Space is increasingly congested, with over 22,000 trackable man-made objects in orbit, contested, by an ever-increasing number of man-made threats, and competitive, as the U.S. competitive advantage and technological lead in space erodes.

However, the challenges of a congested, contested, and competitive environment also present the United States with opportunities for leadership and partnership. The joint Department of Defense and Intelligence Community National Security Space Strategy released last year charts a path for the next decade to respond to the current and projected space strategic environment.

The National Security Space Strategy identifies three U.S. national security space objectives: strengthen safety, stability, and security in space; maintain and enhance the strategic national security advantages afforded to the United States by space; and energize the space industrial base that supports U.S. national security. Achieving these objectives will ensure our military continued access to space-based assets national security purposes.

The United States will retain leadership in space by strengthening our national security, civil, and commercial space capabilities and improving our collaboration with others worldwide. Leadership cannot be predicated on declaratory policy alone. It must build upon a willingness to maintain strategic advantages while working with the international community to develop collective norms of responsible behavior, collaborate on capabilities with international and industry partners, and improve our coordination and information sharing.

The President and Secretary of Defense recently released Strategic Guidance for the Department. This Guidance articulates priorities for a 21<sup>st</sup> century defense that protects the country and sustains U.S. global leadership. It reflects the need for DoD and the military to adapt in order to proactively address the changing nature of the security environment and to reflect new fiscal realities. This Strategic Guidance identifies the need to operate effectively in space as one of the missions most important to protecting national interests. Further, it cites resilience of space capabilities as an important component in projecting power in response to Anti-Access/Area Denial challenges.

The new Strategic Guidance builds on and reinforces key elements of the National Security Space Strategy. The National Security Space Strategy outlines five interrelated strategic approaches to chart a future course for national security in space, and many of those key approaches are also reflected in this Guidance. Both documents emphasize strengthening norms of responsible behavior, and finding opportunities to leverage growing civil, foreign and commercial capabilities. Both detail the need to strengthen deterrence while ensuring preparedness to operate in a degraded environment should deterrence fail. Both highlight the importance of the industrial base, as well as the need for innovative approaches and continued investment in science and technology.

The Strategic Guidance gives us renewed impetus to implement the National Security Space Strategy, and we are incorporating the key points of the strategy into the departmental directives, guidance, and instructions. These documents shape how the DoD conducts the space enterprise, and changes here are integral to ensuring that we respond to this more challenging space environment.

Additionally, we are further defining concepts like resilience as they relate to space. An important facet of the National Security Space Strategy's effort to prevent and deter aggression against our space infrastructure is to strengthen the resilience of our architectures to deny the benefits of an attack. The strategy notes that resilience will also enable our ability to operate in a degraded space environment. As we invest in next generation space capabilities and fill gaps in current capabilities, the strategy directs us to include resilience as a key criterion in evaluating alternative architectures. Resilience is not the property of a single system. Rather, it is the ability of a whole architecture to provide functional capabilities necessary for mission success despite environmental adversity or hostile action. Resilience can be achieved in a variety of ways in space and beyond. These include system protection, cross-domain solutions, leveraging foreign capabilities, maturing responsive space capabilities, and hosting payloads on a mix of platforms.

With this in mind, we developed a definition for resilience and criteria for assessment. We can no longer think only in terms of cost and capability. We must also consider whether that capability will be available when the warfighter needs it and an adversary seeks to deny it. This definition was reviewed and improved by the Defense Space Council and is now being promulgated. Our definition is simple:

“Resilience is the ability of an architecture to support the functions necessary for mission success in spite of hostile action or adverse conditions. An architecture is “more resilient” if it can provide these functions with higher probability, shorter periods of reduced capability, and across a wider range of scenarios, conditions, and threats. Resilience may leverage cross-domain or alternative government, commercial, or international capabilities.”

We are implementing the definition and associated methodology for evaluation through current and future architectures, as well as across the Department’s requirements, acquisition, and budget processes. Resilience is a key criterion in ongoing architecture reviews for our SATCOM, defense weather, and other satellite-based capabilities.

We are taking a leading role in international efforts to promote responsible, peaceful, and safe use of space. The NSSS emphasizes that the United States will promote the responsible, peaceful, and safe use of space as the foundational step to addressing the congested and contested space domain. A more cooperative, predictable environment enhances U.S. national security and discourages destabilizing crisis behavior. We are supporting development of data standards, best practices, transparency and confidence-building measures, and norms of behavior for responsible space operations. For instance, we are participating, with other U.S. departments and agencies, in efforts taking place in the United Nations Committee on the Peaceful Uses of Outer Space to further the long-term sustainability of space.

The Department of Defense supports U.S. efforts to work with the European Union and other spacefaring countries to develop an international code of conduct for space activities. A widely-subscribed Code can encourage responsible space behavior and single out those who act otherwise, while reducing risk of misunderstanding and misconduct. We view the European Union’s draft code of conduct for space activities as a promising basis for an international code.

The EU's draft focuses on reducing the risk of creating debris and increasing transparency of space operations. It already reflects U.S. best practices and is consistent with current practices such as notification of space launches and sharing of space data to avoid collisions.

Significantly, the EU's draft is not legally binding and recognizes the inherent right of self-defense. It focuses on activities, rather than unverifiable capabilities, and better serves our interests than the legally-binding ban on space weapons proposed by others. In your recent letter to President Obama, you expressed concerns about the consequences of developing a code of conduct for space activities. As we go through the process of developing an international code, we are committed to ensuring that any code of conduct for space activities advances national security. The U.S. has been closely consulted by the EU on its draft, and we will continue to shape an international Code through active participation in international negotiations.

Additionally, DoD has assessed the operational impact of the current draft and developed steps to ensure that a final Code fully supports our national interests and strategy. We are committed to keeping you informed on the process of developing an international Code.

Working with international partners on encouraging responsible behavior in space is only a part of how our engagement with other spacefarers is evolving. The NSSS is driving changes in how we leverage the capabilities of domestic, international, and industry partners. The strategy directs us to pursue opportunities to partner with responsible nations, international organizations, and commercial firms to augment the U.S. national security space posture. Through these partnerships, we can ensure access to information and services from a more diverse set of systems—and advantage in a contested space environment. Decisions on partnering will be consistent with U.S. policy and international commitments and will consider cost, protection of sources and methods, and effects on the U.S. industrial base.

We are expanding our international partnerships and coalition operations. Space is a domain in which we once operated alone. Increasingly, however, we need to think of operating in space as we do in other domains: in coalition.

Allies like France, Japan, Germany, and Italy have increasing space-based capabilities in a range of mission areas. By leveraging their systems, we can augment our capabilities, add diversity and resilience, and complicate the decision-making of potential adversaries. Cooperation can also better enable coalition operations on land, at sea, and in the air, which for our allies and us are increasingly dependent on space-based capabilities.

The Air Force's Wideband Global Satellite (WGS) system provides a good example. Earlier this year, the Air Force announced that Canada, Denmark, Luxembourg, the Netherlands, and New Zealand have joined with the US and Australia in a long-term multilateral partnership. This effort will increase WGS capacity to U.S. warfighters by jointly acquiring and launching a ninth WGS satellite vehicle, while also providing system capacity to the partners. In addition to increasing the size and capacity of the constellation, internationalizing WGS also complicates the calculations of any country contemplating interference with the system.

Led by General Kehler at STRATCOM, the Department is working to transition today's Joint Space Operations Center into a Combined Space Operations Center (CSpOC). A CSpOC will leverage allied space capabilities to augment our own and increase resilience. It will support our ability to operate in coalition operations as we do in other domains and bolster collective defense and deterrence of attack against collective space assets. As the Department works through this transition, we are building on recent space exercises and cooperative activities, including tracking and analysis of the recent Phobos-Grunt spacecraft re-entry,

Combined space operations require increased sharing of space situational awareness and operational information. Earlier this year, the Secretary of Defense transferred to the Commander of USSTRATCOM his authority to enter into space situational awareness (SSA) data sharing agreements with foreign governments. This compliments USSTRATCOM's existing authority to negotiate SSA sharing agreements with commercial satellite operators. With the extension of this authority to foreign governments, the US will be able to better assist partners with current space operations and lay the groundwork for future cooperative projects. The increasingly challenging space environment means that an unprecedented level of information sharing is needed among space actors, to promote safe and responsible operations in space and reduce the likelihood of mishaps, misperceptions, and mistrust.

Commercial satellite owner/operators play an important role in space situational awareness. STRATCOM currently has more than 30 data sharing agreements with these companies. This is just one of the innovative approaches to working with commercial space operators and protecting the space industrial base that is driven by the NSSS . We seek to foster a space industrial base that is robust, competitive, flexible, healthy, and delivers reliable space capabilities on time and on budget. We are exploring innovative approaches, such as anchor tenancy and hosted payloads, and pursuing strategic partnerships with commercial firms to stabilize costs and improve resilience.

International advances in space technology have put increased importance on reforming U.S. export controls to ensure the competitiveness of the U.S. space industrial base while addressing technology security. Reforming export controls will facilitate U.S. firms' ability to compete in the international marketplace for capabilities that are, or will soon become, widely available globally, while strengthening our ability to protect the most significant U.S. technology



advantages. The National Security Space Strategy reaffirms the necessity of these reforms and echoes the National Space Policy's call for giving favorable consideration for export of those items and technologies that are generally available on the global market, consistent with U.S. national security interests. Reforming export controls on space items will increase U.S. manufacturers' ability to provide U.S. content in foreign satellites, increase opportunities for partnering with foreign manufacturers, and help energize the U.S. space industrial base

The National Security Space Strategy responds to an increasingly challenging space environment. The changes detailed in the strategy will allow us to maintain and enhance the strategic advantages we derive from space. Over the past year, we have begun to implement those changes, both in our internal policies, and in how we relate to other spacefaring entities. The Department of Defense's fiscal year 2013 budget request, building on the new Strategic Guidance, helps further the implementation of these changes and maintains the U.S. military's leading edge in space. The future architectures that we are developing will increase resilience while leveraging growing international and commercial capabilities in space. The Department looks forward to working closely with Congress, our allies, and U.S. industry to continue implementing this new strategy for space.