STATEMENT OF

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ON ARMED SERVICES
SUBCOMMITTEE ON STRATEGIC FORCES

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Introduction

Chairman Rogers, Ranking Member Cooper, and Members of the Subcommittee, I am pleased to join General Hyten, Lt. General Raymond, Ms. Sapp, Mr. Cardillo and Mr. Loverro to testify on Department of Defense space programs.

The Nation’s space-based systems are vital to U.S. warfighting, homeland security, and our way of life. In recent years, Program Executive Officers for Space have satisfied the Department’s requirements for these space-based capabilities while simultaneously negotiating contracts that drive down the costs for these systems. However, our space systems today are facing demonstrated and rapidly evolving threats. In the face of these threats, we and our industrial partners need to think differently about how we prioritize requirements and develop, produce, and operate our next generation space capabilities.

The Threat:

Our dependence on space capabilities has increased as they have become integral to our national security enterprise. Further, although we maintain a substantial asymmetric advantage as a result of those investments, the rapid evolution and expansion of threats to our space capabilities in every orbit regime has highlighted the converse: an asymmetric disadvantage due to the inherent susceptibilities and increasing vulnerabilities of our space systems. Adapting to this new threat environment is driving an increasing mutual dependence between the Department and the Intelligence Community. The Department and the Intelligence Community will need to re-evaluate: (1) our prioritization among requirements for added capability and increased resiliency for future space acquisitions; (2) the areas of emphasis for our space Science and Technology efforts; (3) how we think about and conduct architectural planning for future space capabilities; (4) how and at what pace we develop and manufacture these capabilities and the resulting implications for the space industrial base; (5) how we think about access to space, space control— including space situational awareness, offensive and defensive space control, and intelligence support; and (6) related policy, strategy, doctrine, concepts of operations, and TTPs.
In May 2014, Deputy Secretary of Defense Work directed a Department-wide review, the Strategic Portfolio Review (SPR) for Space, to assess whether the Department’s investments align properly with overarching policy and strategy goals in light of the evolving threat environment. In the first phase of the SPR, we worked closely with the Services and the Intelligence Community to develop integrated strategic goals, posture options, and frameworks necessary to align the space enterprise with the National Space Policy and the National Security Space Strategy. The Department’s strategy emphasizes deterrence, but also assures warfighting effectiveness should deterrence fail. The Department expands FY2016 and future investments to: assure space capabilities against aggressive and comprehensive counterspace programs through resilient capabilities, agile defense, and reconstitution; and provide the space situational awareness to support our goals.

Budget:

The President’s Fiscal Year 2016 budget includes targeted investments in modernized space capabilities geared toward countering emerging threats that could upend our technological superiority and our ability to project power. We can provide a full account of our proposed modernization investments, and the threats that compel them, in a classified setting. However, I would like to amplify details about a few specific programs that offer insight into how we are balancing our acquisition approaches with our look to the future:

**Space Based Infrared System (SBIRS)**

In June 2014, the Air Force awarded the SBIRS Geosynchronous Earth Orbit (GEO) satellites 5 and 6 production contract. SBIRS GEO satellites 5 and 6 are replenishment satellites for GEO satellite 1 and 2 currently in operation, on orbit. The fixed price incentive fee contract approach combined with the two satellite block-buy saved $980 million when compared to the Government’s independent cost estimate. SBIRS continues to leverage Space Modernization Initiative (SMI) investments to improve affordability and to remain effective in the strategic environment. SBIRS has developed SMI strategies to invest in program efforts that create trade space for future
acquisition decisions through investments to sustain or improve their current Programs of Record and to plan for the future by exploring competition, affordable technology alternatives and architectures.

The SBIRS Follow-On AoA is being conducted to inform FY17 funding decisions related to the SBIRS program of record (POR). Concerns have been raised by Congress and within the Department regarding future obsolescence costs for the SBIRS POR as well as technology insertion to address future threats. Conducting this AoA will inform materiel solutions to maintain our technological edge in the mission areas addressed by SBIRS.

**Space Fence**

The continued growth in use of space coupled with irresponsible actions such as China’s 2007 destructive anti-satellite test has resulted in an increasingly congested space domain. As an example of this challenge, just last month an inactive Defense Meteorological Satellite Program (DMSP) satellite exploded, producing 43 new tracked pieces of debris. The resulting space debris poses a significant risk to safe and effective, manned and unmanned space operations. Addressing the risk posed by orbital debris requires new capabilities to track and process positional information to support effective conjunction assessments and notifications to reduce the chance of on-orbit collisions. To address this challenge, the department included funding in the FY 2016 budget to accelerate the delivery of the Joint Space Operations Center Mission System (JMS). JMS will provide enhanced data fusion and processing capabilities needed to maintain a larger catalog of the smaller debris objects. In conjunction with JMS, Space Fence will provide dramatically enhanced uncued detection and surveillance capabilities of the most threatening small and medium objects in Low Earth Orbit (LEO). The primary mission of Space Fence is to identify objects in low-earth orbit that are potentially a danger to our space assets. Maintaining the catalog of all LEO objects, including active satellites, is a secondary Space Fence mission. The Air Force awarded the Space Fence contract in June 2014 and recently completed a successful Critical
Design Review. The program is on track to achieve Initial Operational Capability in FY 2019.

**Evolved Expendable Launch Vehicle (EELV)**

Our assured access to space provides national security decision-makers with unfettered global access and unprecedented advantages in national decision-making, military operations, and homeland security. Maintaining the benefits afforded to the United States by space is central to our national security, and enabling our space operations requires we have access to efficient and reliable space launch capabilities, that are robust, responsive and resilient. The DoD’s focus on sound and disciplined systems engineering practices, what we call our Mission Assurance Process, emerged from very hard lessons learned from a string of costly failures in the late 1990’s. Over the past 15 years, this National Security Space (NSS) Mission Assurance Process has proven to be exceptionally effective with an incredible record of 81 successful operational EELV missions since 2002 and 107 National Security missions since 1999. We champion mission assurance because the cost of a single launch failure, especially one with a multibillion dollar satellite on board, can very quickly overwhelm any savings achieved by overly aggressive cost-cutting acquisition strategies. This is why we consider certification of new entrants, and mission assurance for all launch service providers, to be essential elements of our Assured Access to Space. As we employ the certification process with new entrants to the EELV program, we continue this focus in cooperation with each of the prospective EELV new entrants. Our rigorous multi-step certification process ensures all new launch service providers meet the existing high NSS standards for design and operational reliability. We will continue to learn and evolve this process as new entrants are certified for the EELV program.

As a direct result of our concerted efforts to apply the Department’s Better Buying Power principles to the EELV program, we successfully negotiated and awarded a long-term contract for new EELV launch services and the capability to launch previously procured services. This contract effectively stabilizes the U.S. launch industrial base
through 2019 while continuing to support a strategy that has saved the Department and taxpayers more than $4.4 billion.

The Air Force’s strategy to introduce competition into the EELV program provides the opportunity for multiple potential launch providers to successfully complete the New Entrant Certification process through the joint development of New Entrant Certification Plans. The Air Force works cooperatively with all potential new providers to confirm their understanding of the certification process and its requirements while ensuring they meet the stringent mission assurance standards necessary to launch our Nation’s national security payloads. In the FY 2016 Program Budget Review (PBR) the Department continues to work to increase, in the near term, the number of competitive launch service procurement opportunities available to industry.

The Department is deliberately working towards new entrant certification with Space X, expending significant manpower and funding on the effort. Certification is, by design, a rigorous, resource intensive, multistep process. The process uses sound systems engineering principles designed to ensure compliance with robust NSS Mission Assurance standards. This is the standard that has been a critical element of our launch successes over the last 15 years and it will continue to be applied to all EELV launch service providers.

**Dependence on Russian Engines (RD-180)**

Our NSS payloads are launched on vehicles acquired under the Evolved Expendable Launch Vehicle (EELV) program which currently uses the Atlas V and Delta IV families of launch vehicles. The Russian produced RD-180 rocket engine is the propulsion system used to power the Atlas V first stage and provides access to space for some of our most critical national security space payloads. There were sound policy and cost savings reasons for the original decision to allow the incorporation of this engine into a US launch vehicle. One of the considerations explicitly addressed at the time of that decision – and periodically since that time -- was the risk associated with utilizing a
non-US-manufactured article for a critical national security capability. Recent geopolitical events have renewed our concerns about this practice.

We are working with Congress to eliminate our utilization of the RD-180 rocket engine. As we also work with industry to develop a new domestically-powered launch capability, the Department would like to make that transition as efficient and affordable as possible. Unfortunately the timing associated with the FY2015 National Defense Authorization Act (NDAA) section 1608 language causes some difficulty during the next phase of EELV procurements to the degree that precluding the use of the RD-180 engine could adversely impact our ability to conduct price based competition and adversely impact our goal of having two viable domestic providers capable of lifting the entire NSS manifest, thus increasing our domestic capabilities and providing opportunities for cost reductions. The ultimate goal is for the Department to have two or more commercially-viable launch service providers capable of launching the entire NSS manifest using domestically produced propulsion systems.

**Military Satellite and Commercial Satellite Communications**

The Department’s current satellite communications capability is comprised of a mix of military communications satellites and commercial SATCOM (COMSATCOM) leases. DoD will continue to maximize the use of our MILSATCOM capabilities to satisfy enduring requirements and the exigencies of worldwide 24/7 access and control. The Department will also continue to use COMSATCOM when military capacity is unavailable, when user demand exceeds the supply of Wideband Global SATCOM (WGS) capacity, or when the users’ ground infrastructure (e.g., ground stations) will only operate over commercial satellites. The current distribution of capability was driven by the exigencies of Operations Enduring Freedom (in Afghanistan) and Iraqi Freedom (in Iraq) and is partially funded with Overseas Contingency Operations (OCO) supplemental funds.

The Department is conducting an analysis of alternatives to inform the investment path towards a future protected satellite communications services design that is effective in the emerging, contested environment and provides the connectivity
required during crises. Although focused on providing a comparison of alternatives for protected satellite communications, the AoA considers contributions from the aerial and surface network layers as well. The analysis is still ongoing, but we expect the initial results to inform near-term acquisition decisions for AEHF and other programs that contribute to this most critical feature of our national defense posture.

The Department will explore alternative approaches to more cost-effectively procure COMSATCOM services through a series of pathfinders. DoD will report its pathfinder plan to Congress in its response to FY15 NDAA section 1605 – Pilot Program for Acquisition of Commercial Satellite Communication Services. The results of these and previous pathfinder activities are also informing the ongoing protected satellite communication Analysis of Alternatives.

**Global Positioning System (GPS)**

The Air Force launched four GPS IIF satellites in 2014 and has scheduled the next three space vehicles in the series for launch during 2015. GPS Block II Electronic Protection reached Initial Operating Capability (IOC) in 2014. This milestone provides the following Selective Availability Anti-Spoofing Module (SAASM) operations: Special Navigation, Over The Air Distribution and Over The Air Rekey, increasing resiliency and our ability to operate in increasingly hostile electronic environments. The next series of GPS satellites, GPS III, continued development on satellite vehicles (SV) 1 and 2 as well as the procurement for SV 10.

Our Next Generation Operational Control Segment (OCX), providing ground control for the GPS constellation, will provide enormous improvements to the system. For example, OCX will increase accuracy and lift the current limit on the number of satellites in the constellation, achieving better geometry in difficult to reach areas.

On February 5, 2015, USD (AT&L) conducted a Deep Dive Review of OCX to review the program cost, schedule, and performance. As a result of the meeting, the Air Force recommended establishment of cost and schedule "tripwires" for a future OSD program review. The GPS Program Office is currently conducting a Baseline review of
the current OCX program and will be submitting a revised baseline in the next three months.

**Weather Satellite Follow-On (WSF)**

During 2012 and 2013, the Department conducted a Space Based Environmental Monitoring (SBEM) Analysis of Alternatives (AoA). The AoA concluded that SBEM sensors operated by civil agencies and international partners could satisfy eight of eleven JROC-validated “weather gaps.” The Air Force was directed to develop materiel solutions for the remaining three gaps: ocean surface vector winds, tropical cyclone intensity, and energetic charged particles. WSF is the acquisition program (pre-MDAP) that will provide this solution.

**Conclusion**

As I alluded to within this statement, the space domain has changed in fundamental ways. Space is no longer a sanctuary and we can no longer take space mission assurance for granted. Likewise, we can no longer invest and acquire our vital space capabilities under that same assumption.

Finally, I want to say a few words about sequestration and the Budget Control Act. Sequestration may very well return in Fiscal Year 2016 – and, even if it does not, the continuing threat of sequestration makes sound investments in space challenging. The rise of foreign counterspace capabilities, coupled with the overall decline in U.S. research and development investments, is jeopardizing our technological superiority. Sequestration can only harm our ability to address these concerns in an already constrained fiscal environment.