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SUBCOMMITTEE ON STRATEGIC FORCES
HOUSE ARMED SERVICES COMMITTEE
UNITED STATES HOUSE OF REPRESENTATIVES

DEPARTMENT OF THE AIR FORCE
PRESENTATION TO THE HOUSE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON STRATEGIC FORCES
UNITED STATES HOUSE OF REPRESENTATIVES

SUBJECT: FY24 National Security Space Programs
STATEMENT OF: Honorable Frank Calvelli,
Assistant Secretary of the Air Force for Space Acquisition and Integration

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Introduction

Chairman Lamborn, Ranking Member Moulton, and distinguished members of the Committee, thank you for inviting me to testify before you today. I am also pleased to testify alongside Secretary Plumb, Dr. Scolese, and Ms. Wilkerson.

We continue to face an unprecedented strategic competitor in China, and our space environment continues to become more congested, contested, and competitive. We have seen an exponential growth of in-space activity, including counter-space threats. To address the challenges outlined in the National Defense Strategy, the Department of the Air Force and the United States Space Force are fundamentally transforming our space architecture to be more resilient, proliferated, and integrated to meet warfighter requirements to counter the growing threat from strategic competitors.

Transforming the Space Architecture

Transforming our Space Architecture involves multiple mission areas that include changes to terrestrial infrastructure, orbital assets, and the transport of data. We are actively moving away from building a small number of highly capable but vulnerable large satellites, to a proliferated resilient **missile warning / missile tracking (MW/MT)** capability. Our resilient MW/MT focuses on tracking advanced threats by integrating critical missile tracking capabilities that previously did not exist. The Space Development Agency (SDA) and Space Systems Command (SSC) are developing the low earth orbit (LEO) and medium earth orbit (MEO) architecture through an incremental process that allows us to incorporate new technologies and get them on orbit fast. The Space Development Agency just launched the first two LEO tracking satellites this month and will launch six more by the end of this fiscal year. Thirty-nine more tracking satellites will be delivered in their next Tranche, which is set to launch in 2025. SSC's resilient MW/MT MEO portion will follow with nine satellites in two orbital planes with launches in FY26 and FY27.

As we develop this new capability, we are continuing the development of the Next Generation Geosynchronous and Next Generation Polar missile warning programs as a bridge to enable the eventual transition to the resilient MW/MT architecture.

Simultaneously we are transitioning our **space domain awareness** architecture to focus on deterring and defending against attempts to negate our critical space capabilities. We continue our Geosynchronous Space Situational Awareness Program (GSSAP), which remains our hallmark program for space domain awareness. We are adding three new radar sites (United States, Australia, and United Kingdom) with the Deep Space Advanced Radar Capability to enhance our deep-space object tracking to support space combat power employment. Additionally, we are upgrading our space tracking telescopes in the Continental United States and Hawaii as part of our Ground-Based Operational Surveillance System program. These upgrades include new cameras, better sensitivity, and better search capability. We also are collaborating with the Intelligence Community (IC) on a new GEO-based satellite system called Silent Barker that will launch this year, which provides on-orbit optical space domain awareness for orbit determination, discovery, custody, and change detection of deep space objects.

We are fundamentally transforming our **military satellite communications** architecture through disaggregation, proliferation, capacity expansion, and partnerships with allies and commercial entities.

We are designing new architectures that disaggregate the strategic and tactical missions currently found on the Advanced Extremely High Frequency satellites. These future architectures increase resilience by reducing vulnerabilities associated with very large multi-mission satellites and increase architectural diversity via payload hosting opportunities.

The Space Development Agency proliferated transport layer will provide resilient low-latency military data connectivity to a range of warfighter platforms. The first eight of these satellites were launched in April. Another 12 will launch this June, followed by 138 more in 2024.

We continue to expand and enhance our wideband satellite communications capabilities by making ground system improvements that will increase resiliency of the Wideband Global Satellite Communications (SATCOM), or WGS, satellites 11 and 12. Additionally, we are on track to operationalize the new Protected Tactical Waveform by the end of 2024 to be used over WGS, which adds critical anti-jam capabilities for our warfighters. We are also beginning the service life extension development for two additional Mobile User Objective System satellites to extend narrowband services as interim gap-fillers as we define the future architecture.

In partnership with Norway, our Enhanced Polar System Recapitalization payload will provide protected SATCOM coverage in the North Polar Region and will launch next year. We also are beginning a commercial SATCOM partnership with Luxembourg and have cooperative agreements on the use of U.S. military SATCOM with 10 countries.

These holistic efforts enhance our ability to fight in contested and degraded operational environments through increased capacity, extended coverage, and anti-jam capabilities. Our pivot to a resilient, integrated, and proliferated military SATCOM architecture provides diverse capabilities that enable warfighters to have data transport in any environment and whenever needed in daily operations, crisis, or conflict.

We continue to build upon the success of our **Global Positioning System (GPS) program**. We have four GPS III satellites completed and in storage and are on contract to produce another 10 satellites. GPS III and IIF satellites will increase military signal power as well as produce a more resilient fourth civil signal. In FY24, we will launch and begin testing of the Navigation Technology Satellite 3, an end-to-end space-based prototype across space, ground, and user equipment segments to improve resiliency in contested environments against jamming and spoofing. We also are making progress with the development and testing of the cyber-hardened next-generation GPS ground control segment and paying careful attention to this troubled program which is years late and significantly overrun on costs.

We are transitioning our solution for **moving target indication** from the air domain to the space domain. The Long-Range Kill Chains is an FY24 new start program element that supports a proliferated space-based ground moving target indication (GMTI) capability. The U.S. Space

Force is collaborating with the IC to design, develop, deploy, and operate space-based GMTI for combatant command requirements. It will provide actionable information on adversary surface targets that the U.S. Space Force will deliver to the warfighter through the Advanced Battle Management System as an integral part of Joint All-Domain Command and Control. The space-based systems will surpass the range limitations of current air platforms and provide capabilities in contested and non-contested environments to ensure the strategic advantage provided by GMTI is available to warfighters even when facing near-peer competitors.

At the same time, we are making tough budget choices. We are reducing Next Generation Overhead Persistent Infrared (NG OPIR) Geosynchronous Earth Orbit (GEO) (NGG) space vehicle purchases from three to two, ensuring we have the resources to pivot to resilient MW/MT. The NGG and NG OPIR Polar programs successfully completed several major milestones, and the Space Based Infrared System (SBIRS) constellation continues to have positive performance, thus ensuring our critical missile warning capability. We also are delaying the purchase of additional GPS IIF satellites in FY24. The GPS constellation is healthy, with four satellites ready for launch in FY24, FY25, and FY26. This enables the U.S. Space Force to fund immediate resiliency priorities in other mission areas with no impact to the GPS military code or civil service.

Critical Capabilities Delivered in the Last Year (Jan 2022 – Present)

Over the past 15 months, the Department has provided significant new capabilities on orbit. In January 2022, we launched two SSC-developed GSSAP satellites bringing the constellation to a total of six satellites. Having two more GSSAP satellites enables the U.S. Space Force to provide immediate and precise orbital predictions of all geosynchronous objects, as well as detailed space domain awareness in the GEO belt, which is critical to our space superiority.

In July 2022, SSC launched two experimental satellites, one of which was the Wide Field of View demonstration. This new technology will increase the amount of Earth coverage to over 3,000 kilometers at any one time, an unprecedented area not previously incorporated into any missile warning platform. The data from this demonstration will be used to develop future missile warning sensors in LEO and MEO.

SSC completed the SBIRS constellation with the launch of the GEO-6 satellite in August 2022 and operational acceptance in March 2023. The robust SBIRS constellation will continue providing persistent ballistic missile warning and launch detection crucial to national defense and deterrence, thus enabling the pivot to a resilient MW/MT architecture.

In November 2022, SSC launched the second Long Duration Propulsive Evolved Expendable Launch Vehicle (EELV) Secondary Payload Adapter (ESPA) (LDPE) mission. LDPE provides a low-cost, multi-mission propulsive platform that enables multiple prototype demonstrations. Both the LDPE and the ring-shaped payload adapter provide small satellite providers with launch opportunities more readily than ever before. This vehicle was delivered in only four years from contract award, a timeline approaching my recent guidance to drive contract scope to three years or fewer from start to launch.

In January 2023, the sixth of ten SSC-developed GPS III satellites launched. Enabled by on-orbit verification efficiencies to expedite warfighter capability delivery, Space Operations Command operationally accepted GPS III-06 just 12 days after launch.

Also, in January 2023, the Space Rapid Capabilities Office (SpRCO) launched and initialized three operational prototypes, including two for enhanced situational awareness and one cryptographic interface payload providing secure space-to-ground communications capability. These systems are the first SpRCO on-orbit assets, with all three successfully testing within two months from launch, a major accomplishment for critical rapid acquisitions.

One of the most notable achievements in space acquisition occurred when SDA successfully launched the first 10 satellites of the Proliferated Warfighter Space Architecture. On April 2, 2023, SDA delivered 8 transport layer and 2 tracking layer Tranche 0 satellites just 31 months after contract award. The second launch, to complete the 28-satellite Tranche 0, will occur Summer of 2023, providing the warfighter immersion tranche by supporting military exercises, missile tracking tests, and demonstrating technology and process feasibility. This accelerated timeline represents a necessary benchmark for space acquisitions.

Overall, in the past 15 months we launched a total of 9 National Security Space Launch missions to provide critical capability to the Nation.

Launch

Our launch programs—National Security Space Launch (NSSL) and Rocket Systems Launch Program (RSLP)—evolved tremendously over the past five years with unprecedented growth in the commercial launch market and focus on the pacing challenge. We are adapting our procurement strategies and concept of operations to best leverage emerging commercial launch capabilities to meet warfighter needs across the Department of Defense (DoD), IC, and other mission partners. We totaled seven successful NSSL launches in FY22 and are on track to exceed that count this fiscal year.

NSSL has a long and respected legacy of success, delivering reliable medium and heavy space lift for our nation's most complex payloads and demanding orbits without fail. In NSSL Phase 2, we met the Congressional mandate to end U.S. reliance on Russian-made engines by investing in new rocket technologies and expanding competition. We drove down government launch costs and provided assured access to space through two launch service providers (SpaceX and United Launch Alliance) capable of meeting all reference orbits.

We are in an exciting period of transition as FY24 marks the fifth and final order year of the NSSL Phase 2 contract during which we are ordering 20 launch services for the U.S. Space Force and National Reconnaissance Office (60 percent increase from FY23) along with the launch support required to place critical capabilities on orbit. Simultaneously, we are preparing for the next NSSL procurement phase starting in FY25. Building upon Phase 2, Phase 3 pursues a dual-lane, hybrid approach to maximize competition and use of the Nation's robust commercial launch industry as we transition to more proliferated space architectures. NSSL Phase 3 will provide assured access to space and protects capacity for the DoD's less risk-tolerant missions

with two fully certified launch service providers in one lane while allowing emerging providers to compete, when ready, for the DoD's more risk-tolerant missions in another lane. This diversification produces a resilient launch architecture that allows the U.S. Space Force to rapidly harness new technological discoveries to improve launch reliability and success.

Complementary to NSSL, RSLP primarily focuses on launching our smaller payloads (e.g., suborbital targets, experimental, demonstration), and allows us to meet the full spectrum of launch. We have access to 11 different launch service providers through RSLP and we are working to on-ramp more providers in the next year. Our ability to use space effectively relies on maintaining assured access, being the first to field necessary capabilities, and having the ability to rapidly reconstitute them, if necessary. In sum, our portfolio of launch programs continues to push the envelope to accelerate launch timelines to deliver integrated and resilient capabilities more rapidly whenever and wherever needed.

FY24 marks the first time the U.S. Space Force has specifically budgeted for Tactically Responsive Space (TacRS), acknowledging TacRS as an emerging imperative. Importantly, TacRS is more than just launch capability; it also includes the end-to-end mission for satellite, ground capability, integration activities, and operations. Together, these activities constitute a complete mission set required to deliver a space capability to the warfighter in a rapid manner, on-demand to either reconstitute or augment capabilities in a more contested environment.

We successfully completed the first TacRS demonstration, Tactically Responsive Launch-2, in June 2021 after building a demonstration satellite in 12 months and launching it 21 days after call-up. For the next demo, VICTUS NOX, we plan to build the satellite in 10 months and only have a 3.5-day call-up (60-hour activation and launch within 24 hours of an operational need). VICTUS NOX is scheduled to launch this summer. In FY24, we are investing \$60 million to demonstrate a 24-hour notification to launch timeline and to develop the operations, training, testing, acquisitions, concept of operations, and Tactics, Techniques, and Procedures required to establish an enduring TacRS capability.

Managing the Space Acquisition Enterprise

As the Assistant Secretary of the Air Force for Space Acquisition and Integration, a new role created by Congress, I am singularly focused on transforming the space acquisition enterprise to add speed to our acquisitions and meet the growing threat posed by strategic competition. There are three organizations with unique capabilities and authorities that support me: Space Systems Command (SSC), Space Development Agency (SDA), and Space Rapid Capabilities Office (SpRCO). Each has unique strengths and, in some cases, unique authorities from Congress. I am managing their programs as an integrated portfolio leveraging their strengths and authorities, in much the same way that I effectively managed space programs at the National Reconnaissance Office.

As the Space Service Acquisition Executive, I conduct reviews with each of my portfolio leads (Program Executive Officers) every two weeks to discuss the status of programs within their purview. I also hold Quarterly Program Reviews for a deeper program analysis. During these quarterly reviews, the government program managers present the technical, schedule, cost, and

staffing status, open risks and issues, upcoming activities, and an overall assessment of program health. Based on the data from the quarterlies to date—the latest in February 2023—we identified a few troubled programs to track more closely. For those programs, I require each selected program to provide a biweekly update on progress against a detailed schedule to get to a healthy status. Holistically, these reviews enable my workforce and me to ensure all our programs remain focused on delivering rapid, resilient, and integrated capabilities to our warfighters, on cost and on schedule.

In October of 2022, I issued strategic acquisition guidance to the workforce, outlining **9 Space Acquisition Tenets**. The tenets form the basis of a new direction to transform our space acquisition approach and refocus our space acquisition professionals on addressing the threat in the next decade by emphasizing speed and program management discipline. The tenets are:

- 1) Build Smaller Satellites, Smaller Ground Systems, and Minimize Non-Recurring Engineering
- 2) Get the Acquisition Strategy Correct
- 3) Enable Teamwork Between Contracting Officer and Program Manager
- 4) Award Executable Contracts
- 5) Maintain Program Stability
- 6) Avoid SAPs and Over Classifying
- 7) Deliver Ground Before Launch
- 8) Hold Industry Accountable for Results
- 9) Execute – Deliver Capabilities that Work, and Deliver them on Schedule and on Cost

To emphasize how these tenets enable speed, I derived a simple formula for going fast in space acquisition which includes:

- 1) Build smaller systems
- + 2) Use existing technology designs to minimize non-recurring engineering
- + 3) Drive contract scope to 3 years or less from start to launch
- + 4) Use fixed-price contracts

= Mission Capabilities Faster to Our Warfighters

This simple formula is the cornerstone of our approach to build resilient architectures faster with innately integrated capabilities. Together, the tenets and formula provide the vision for how our space acquisition workforce is approaching a transformation to the process of delivering space capabilities to meet and outpace the pacing challenge.

Further, thanks to Congress, I chair the Space Acquisition Council (SAC) for the Department of Defense. The SAC has been a valuable tool to ensure collaboration and integration while avoiding duplication of effort across the entire national security space enterprise across all departments. Additionally, I chair the Acquisition Strategy Panel for all Space Force programs seeking acquisition strategy changes. This forum allows us to evaluate newly proposed space systems, acquisitions, contracts, and incentive strategies to ensure that we optimize our approach

to acquisition and that all portfolio of programs remain concentrated on delivering resilient capabilities faster and more integrated to warfighters.

Finally, I am committed to using all the tools and authorities Congress has provided, which are aiding us in speeding up space acquisition and delivering capabilities to the warfighter rapidly and effectively. We will continue to leverage Middle Tier of Acquisition to quickly identify, prototype, and field innovative solutions to our challenging problems. At the same time, we are using Other Transaction Authorities to increase program flexibility, as well as the pool of possible vendors. Overall, these tools and authorities enable us to use industry practices to move faster, utilize non-traditional companies, expand flexibility, and improve affordability.

Conclusion

In recognition of the evolving threats to our space systems, the U.S. Space Force is off to a good start transforming our space architecture to be more resilient, more integrated, and more capable. I will conclude by re-emphasizing the importance of rapid space acquisitions to meet the threat posed by our strategic competitors. Coupled with taking advantage of commercial services, allied and partner opportunities, and collaboration with the IC, we will ensure we get much needed capabilities into the hands of warfighters faster.

Our competitors seem to have figured out speed. We must do the same.

Thank you to the Committee for your dedication to the Department of the Air Force and our Space Force. I look forward to your questions.