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UNITED STATES SPACE COMMAND

PRESENTATION TO THE SUBCOMMITTEE ON STRATEGIC FORCES
HOUSE ARMED SERVICES COMMITTEE
U.S. HOUSE OF REPRESENTATIVES

SUBJECT: United States Space Command's Role as the Global Sensor Manager

STATEMENT OF: Maj Gen David N. Miller, Jr.
Director of Operations, Training and Force Development
United States Space Command

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Introduction

Chairman Lamborn, Ranking Member Moulton, and distinguished members of the House Armed Services Committee's Subcommittee on Strategic Forces, thank you for the opportunity to represent United States Space Command (USSPACECOM) on the topic of our Unified Command Plan (UCP) assigned task as global sensor manager. Global sensor management is closely linked with our broader operational efforts on space domain awareness, missile warning, and missile defense of the United States and our Allies.

The UCP assigns USSPACECOM the specific responsibility to serve as the global sensor manager, responsible for leading the planning and coordination efforts of sensors across combatant commands (CCMD), U.S. government agencies, and our partner nations. USSPACECOM is uniquely suited to maximize the employment of multi-role sensors, both terrestrially and on orbit. These sensors contribute to our understanding and awareness of threats in space, while also supporting missile warning and missile defense missions. Although United States Strategic Command (USSTRATCOM) retains responsibility for trans-regional missile defense, global sensor management is a critical enabling function for responding to today's increasingly complex and pervasive threat environment. Global sensor management plays an integral role in deterrence by denial, which helps achieve the National Defense Strategy's priorities of defending the homeland, deterring strategic attacks, and deterring aggression.

Environment

The 2022 Missile Defense Review emphasized the evolving air and missile threat environment as one of the main challenges to U.S. national interests. A critical component in countering these threats is understanding our adversaries. This includes expanding the

command's ability to identify, characterize, and attribute threats through an array of traditional and non-traditional sensors capable of enhancing vital space domain awareness, missile warning and missile defense functions.

Our adversaries are evolving, diversifying, and proliferating their inventories of advanced missiles and technologies that can threaten both the U.S. homeland and our interests around the globe. Hypersonic glide vehicles, fractional orbital platforms, and hypersonic cruise missiles pose diverse threats complicating targeting, tracking, and impact determination. China is the pacing challenge. It is rapidly expanding its missile capabilities with an emphasis on hypersonic platforms, as well as orbital and maneuverable reentry vehicles, a capability they tested on July 27, 2021. Russia's continued upgrades to its nuclear ballistic and cruise missile arsenals pose a significant strategic threat designed to stress our sensors and defensive postures. Finally, rogue actors like North Korea and Iran continue to expand their offensive strategic capabilities, developing hypersonic, ballistic, and cruise missiles that could threaten the U.S. homeland, our deployed forces, Allies, and partners.

This environment demands integrated missile warning, space domain awareness, and missile defense solutions to enable globally persistent space and missile threat tracking. The complexity of threats we face means we can no longer think in terms of "a linear kill chain" where one sensor identifies a threat and relays it for prosecution to a single weapon system. Rather, we must face our challenges with "kill webs" where multiple sensors around the globe and on-orbit identify targets, retain custody, and pass data through integrated command and control systems to enable in-time engagement by the best-suited weapon system. These sensors may be theater or strategic level sensors. Their seamless integration is where USSPACECOM's role as global sensor manager enables flexibility and rapid decision making for missile warning,

missile defense, and space defense functions.

USSPACECOM's Role as Global Sensor Manager

In USSPACECOM's role as the global sensor manager, the command is tasked with the responsibility to plan, manage, and oversee the operations of all assigned space domain awareness, missile defense, and missile warning sensors. The data provided is crucial to Department of Defense and Inter-Agency decision superiority. The global sensor manager is tasked to coordinate with all CCMDs, U.S. government agencies, and our international partners to integrate the fullest range of sensors capable of contributing to space domain awareness. The integration of these systems across CCMDs provides persistent awareness of both terrestrial and space-based threats, 24 hours a day, 365 days a year.

USSPACECOM's Technical Sensor Contributions

USSPACECOM's assigned sensors are a critical enabler to all CCMDs and national-level military command centers. The preponderance of assigned sensors perform missile warning, missile defense, and space domain awareness missions simultaneously. Many purpose-built, missile defense sensors are also capable of contributing to USSPACECOM's space domain awareness mission. These are often referred to as non-traditional sensors. For example, in partnership with other CCMDs, the Space Development Agency (SDA), and the Missile Defense Agency (MDA), we demonstrated how regional missile defense sensors can and should be used for more than one function to maximize their technical potential. Traditional missile defense sensors are capable of augmenting missile warning sensor coverage and have proven their value in support of detecting and tracking space threats entering, transiting, and reentering from the space domain. We do not require tactical control of another CCMD's assigned assets to leverage

terrestrial or space-based systems to provide missile warning, missile defense, and space domain awareness.

USSPACECOM's sensors, like the Space-Based Infrared System (SBIRS) and Defense Support Program satellites, provide the first alert of a missile launch from anywhere on the planet to all national leaders, CCMDs, the National Military Command System, and select international partners. This initial alert tips and cues USSPACECOM and other CCMD sensors through theater and homeland defense communications architectures. Those communication architectures connect USSPACECOM's space-based warning segment to terrestrial warning and defense sensors for the purposes of theater and homeland missile defense. Near term proliferation of these architectures and capabilities by the Department is critical in our future approach. Proliferation in times of conflict adds resilience to essential capabilities. In times of competition, resiliency imposes costs on our competitors' attack strategies and is critical to integrated deterrence. Resiliency is fundamental, but resiliency alone will not deter attacks or assure protection for our space assets. For USSPACECOM to protect and defend U.S. and, as directed, Allied, partner, and commercial space assets, we require Congress' continued investment in joint military space capabilities, resilient architectures, and protection efforts.

USSPACECOM is actively working with other CCMDs and agencies to leverage existing sensors to contribute to the space domain awareness mission. AN/TPY-2, Sea-Based X-Band Radar, and Aegis Combat System operators demonstrated the capability to support our collective understanding of events and activities in the space domain in both exercise and real-world operations. In coordination with other CCMDs and Agency partners, we are actively testing technical solutions that enhance both the supported CCMDs' missions and USSPACECOM's space domain awareness mission. Additional fusion of other intelligence disciplines through our

close cooperation with the Intelligence Community helps further improve our understanding of the space domain and our competition.

USSPACECOM is working to leverage commercial space domain awareness partnerships as part of the command's global sensor management role. American commercial innovation is an asymmetric advantage our competitors do not possess, and commercial companies are providing unprecedented capability in support of our response to the ongoing Russian invasion of Ukraine. USSPACECOM has published a Commercial Integration Strategy to enhance the command's overall military space power through the collaboration, integration, and partnership with U.S. commercial industry. The strategy sets priorities and synchronizes commercial integration efforts so that USSPACECOM can mitigate capability gaps and improve space architecture resiliency.

Coordination with Other CCMDs and Agencies

USSPACECOM has partnered with U.S. Northern Command (USNORTHCOM), USSTRATCOM, and other agencies to provide exquisite global sensor management capabilities. In the past year, this team collectively broke down barriers in support of our nation's collective warning and defense interests. Our integration with USNORTHCOM on missile warning and missile defense helps provide sensor coverage for the homeland defense mission. In addition to our CCMD support, the global sensor management role continues to expand our relationships and integration with Allied nations and organizations such as NATO.

Beyond our daily coordination in response to real world operational demands, USSPACECOM regularly participates in advanced, coalition-integrated global and regional exercises and war-games to build and test our sensor management processes. Exercises like Global Lightning, Global Thunder, Austere Challenge, and Pacific Fury provide opportunities to

employ our sensors and management capabilities. We use these exercises to train our crews for this complex environment, while also preparing the Joint Force, Allies, and partners to better leverage the global sensor management capabilities USSPACECOM can provide.

USSPACECOM will continue to demonstrate our sensor management and other operational concepts by conducting two mission centric exercises in FY23 as building blocks to a full-scale Tier 1 exercise in FY24.

Today's Sensor Architecture and Building Future Capabilities

Combining global sensor manager responsibilities with missile warning and missile defense will help us advocate for an integrated and efficient solution that modernizes and recapitalizes our aging sensor architecture. We face a continuing challenge of keeping pace with evolving threats and technologies while ensuring our sensor architecture components—such as ground-based radars and SBIRS—remain optimized and modernized with key technical software and hardware upgrades. Sustaining and upgrading 20th century sensors that are increasingly obsolete and hard to maintain remains a challenge. The existing, limited portfolios of aging terrestrial and space-based sensors are driving us to pursue fielding new capabilities in the future, while still leveraging and integrating legacy sensors in support of critical warning and active defense functions today. While we need to expand and improve our ground-based capabilities, the optimal solution requires investment in a space sensor layer integrated with ground-based sensors to defeat these advanced and evolving threats.

Continued funding for research and development efforts, such as next-generation, space-based and terrestrial sensor systems, are key to keeping pace with evolving adversary threats across all domains. These capabilities must be resilient, and we must be able to defend and reconstitute them to achieve the space and cross-domain mission assurance required by the future

Joint Force. On-orbit systems provide valuable solutions to layered tracking and discrimination capability for terrestrial threats, while terrestrial systems provide valuable solutions to tracking and characterizing activities in space. A space tracking and characterization constellation combined with next-generation, overhead persistent infrared systems would provide significant improvements necessary to detect advanced threats. USSPACECOM is working with the SDA and U.S. Space Force to develop requirements for future space-based missile warning and missile tracking layers. These requirements include the ability to tip and cue sensors across multiple orbits, which will provide global, pole-to-pole detection and tracking capabilities. These space-based layers must be able to detect, track, characterize, and target hypersonic glide vehicles and ballistic missile threats.

Whether future systems exist in the orbital regime, air, land, or sea, they must possess multiple mission area capabilities and be integrated into the joint environment. Space-based and terrestrial sensor architectures must be capable of supporting space domain awareness, missile defense, and missile warning missions simultaneously. Their disparate data must be fusible and displayable to allow decision makers to act on the best available information. Only through achieving this goal can we expect to maintain our edge throughout the spectrum of competition to conflict.

USSPACECOM strongly endorses continuing work on systems such as the MDA's Long-Range Discrimination Radar, the SDA's Tracking Layer Satellites, and the MDA's Hypersonic and Ballistic Tracking Space Sensor. We continue to work across the Department to integrate into the Joint Warfighting Concept and leverage systems like Joint All-Domain Command and Control, and the Command and Control, Battle Management and Communications (C2BMC) system in support of the space domain awareness mission. We are

working to integrate Space Surveillance Network sensors into C2BMC that will greatly enhance our battlespace awareness. This multi-mission system provides USSPACECOM greater flexibility as the global sensor manager and is critical to integrating the missile warning, missile defense, and space domain awareness missions.

Conclusion

USSPACECOM's team of outstanding service members, civilians, and contractors work every day to integrate within the Department of Defense as the global sensor manager. We provide unmatched support to missile warning and missile defense through the optimization of existing sensors, and we appreciate Congress's support as we develop the next generation of advanced terrestrial and on-orbit capabilities. USSPACECOM also advances the use of traditional missile warning and missile defense sensors for space domain awareness, facilitating the command's protect and defend mission in space, while providing additional capability in countering advanced missile threats. Under the direction of the President and Secretary of Defense, and with the support of Congress, USSPACECOM is prepared to provide global sensor management in support of missile warning, missile defense, and space domain awareness to ensure there is never a day without space.