

STATEMENT OF

DR. JOHN F. PLUMB

ASSISTANT SECRETARY OF DEFENSE FOR SPACE POLICY

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Introduction

Chairman King, Ranking Member Fischer, and distinguished members of the Committee: Thank you for inviting me to testify before you on the Department's national security space programs. I am honored to appear alongside Air Force Assistant Secretary Calvelli and General Thompson.

Space plays a critical role in American security, prosperity, and way of life. Space-based services support the world's financial system, scientific discoveries, and environmental monitoring. Every American uses space every single day. For the Department of Defense, all U.S. military service force structures are built assuming continued access to space. Space access enables us to provide our military with indications and warning of threats or attacks, command and control of our forces across the globe, and monitoring of adversary activities. U.S. space capabilities, such as positioning, navigation, and timing (PNT), satellite communications (SATCOM), missile warning and missile tracking, and other missions, are critical to overall military effectiveness across all domains and, therefore, to successful homeland defense, deterrence, and countering aggression. The intelligence, surveillance, and reconnaissance (ISR) support provided by space capabilities is vital to identifying and exposing aggressive activity, deterring escalation, and catalyzing international responses to crises.

The Department's Fiscal Year (FY) 2024 space budget request of \$33.3 billion is driven by the priorities outlined in the National Defense Strategy (NDS). This historic investment in space reflects a net increase of \$22.9 billion over the Future Years Defense Program (FYDP) for the U.S. Space Force and an increase of approximately 15% year to year from FY 2023 to meet emerging threats. The investments in the FY 2024 space budget request will enable the

Department of Defense to: (1) maintain the benefits provided to all from space by preserving stability in, access to, and freedom to operate in, from, and through the space domain; and (2) deter hostile uses of space that threaten the national security interests of the United States and its allies and partners, while ensuring we are prepared to prevail in conflict, if deterrence fails.

Security Environment

Today, the United States finds itself in a highly dynamic security environment characterized by intensifying strategic competition, assertive behavior by multiple competitors, rapidly evolving domains of conflict, shifting balances of power, and, as a result, a growing risk of military confrontation. Our competitors have placed space warfare and space-enabled long-range strike capabilities at the center of their strategies to coerce and, if necessary, fight the United States and its allies and partners. They seek to create a future operating environment in which they can leverage space and strike capabilities to hold at risk our forces, ports, and airfields, and to deny U.S. freedom of maneuver. The People's Republic of China (PRC) expects space-enabled long-range precision strikes will play an important role in future conflicts, and counterspace operations will be integral to potential PRC military campaigns. Space capabilities also underwrite ongoing efforts by U.S. competitors to gain advantage in "gray zone" competition, undercut U.S. leadership, and reshape global norms to their advantage.

People's Republic of China

The Department's FY 2024 budget is driven by the seriousness of our strategic competition with the PRC, which remains the most comprehensive challenge to U.S. national

security. The PRC is the greatest geopolitical challenge facing the United States because it is the only competitor with the intent and, increasingly, the capability to remake the rules-based international order. The PRC's activities on the ground and, increasingly, in space are designed to advance its global standing, strengthen the PRC's endeavor to erode U.S. influence across military, technological, economic, and diplomatic spheres, and challenge the interests and values of the United States and our allies and partners. The People's Liberation Army (PLA) views space superiority -- the ability to control the space-enabled information sphere and deny adversaries their own space-based information gathering and communication capabilities -- as a critical component of conducting modern "informatized warfare." As a result, the PRC reorganized its military in 2015 to approach space more effectively as a warfighting domain and to support the PLA's holistic approach to joint warfare.

The PLA continues to build a space architecture to enhance its ability to fight and win a modern military conflict. In 2022, the PRC conducted 62 successful space launches, placing 200 payloads into orbit, more than half of which were PRC ISR satellites. Today, the PLA benefits from more than 340 ISR satellites with optical, multispectral, radar, and radiofrequency sensors, and now owns and operates roughly half of the world's ISR systems. The PRC ISR architecture enhances the PRC's worldwide situational awareness and could support the PLA's monitoring, tracking, and targeting of U.S. and allied forces worldwide, especially in the Indo-Pacific region.

The PRC expects ISR capabilities will play an important role in future conflicts by enabling the PLA to acquire timely, high-fidelity information in order to conduct long-range precision strikes and conduct battlefield damage assessments. The PLA continues to integrate ISR, PNT, and SATCOM capabilities into its weapons and command and control (C2) systems

to provide over-the-horizon targeting information for its strike platforms in an effort to challenge U.S. freedom of maneuver on land, sea, and in the air. Recent PLA improvements to its ISR fleet enhance the PLA's ability to operate farther from the Chinese coast and to monitor forces across the globe, including U.S. aircraft carriers, expeditionary strike groups, and deployed air wings. This makes U.S. and allied forces more susceptible to long-range strike and ultimately challenges our ability to conduct joint operations, particularly in the Indo-Pacific region.

The PRC also has a robust network of space surveillance sensors on Earth capable of searching, tracking, and characterizing satellites in all Earth orbits. This network includes a variety of telescopes, radars, and other sensors that allow the PRC to support missions such as intelligence collection, ballistic missile early warning, and counterspace targeting.

The PRC views counterspace systems as a means to deny other militaries' space-based information systems and to deter and counter outside intervention during a regional conflict. The PRC has already fielded ground-based counterspace weapons, including electronic warfare systems, directed energy weapons, and direct-ascent (DA) anti-satellite (ASAT) missiles designed to disrupt, damage, and destroy U.S. satellites. The PRC has launched multiple DA-ASAT missiles, including a 2007 destructive DA-ASAT missile test in low Earth orbit (LEO), and plans to pursue DA-ASAT weapons intended to destroy satellites up to geo-synchronous Earth orbit.

The PRC is probably testing dual-use technologies in space that could be applied to counterspace missions, such as robotic arm technology that could be used for grappling other satellites, as evidenced last year when the Shijian-21 moved a derelict satellite to a graveyard orbit. The PRC continues to seek new methods, which probably include space-based kinetic

energy weapons, to hold our satellites at risk, and is developing other sophisticated capabilities to deliver effects through space, such as the PRC's fractional orbital launch of an intercontinental ballistic missile (ICBM) with a hypersonic glide vehicle from China in 2021.

Russia

Russia reorganized its military in 2015 to create a separate space force because Russia sees achieving supremacy in space as a decisive factor in winning conflicts. Russia believes the importance of space will continue to expand because of the growing role of precision weapons and satellite-supported information networks in conflict, but it seeks to avoid becoming excessively dependent on space to conduct its national missions.

Russia has more than 30 ISR satellites, including some of the world's most capable satellites for optical imagery, radar imagery, signals intelligence, and missile warning. Russia can also employ its civil and commercial remote sensing satellites to supplement military-dedicated capabilities and has sought to acquire satellite imagery from foreign companies. For example, in January 2023, the Department of Treasury sanctioned a PRC company, Spacety China, for providing a Russian-based technology firm with synthetic aperture radar satellite imagery orders over Ukraine in order to enable Wagner Group combat operations.

Russia is developing, testing, and fielding a suite of non-destructive and destructive counterspace systems to degrade or deny U.S. space-based services as a means of offsetting a perceived U.S. military advantage and deterring the United States from entering a regional conflict. Russia has fielded several ground-based lasers that can blind satellite sensors and has a wide range of ground-based electronic warfare systems that can counter the Global Positioning System (GPS), tactical and satellite communications, radars, and Western space-

enabled C2 and weapons guidance systems. Russia also considers space-enabled information collection and transmission to be strategically decisive and has taken steps to modernize its military information attack capabilities. For example, in support of Russia's illegal full-scale invasion of Ukraine in 2022, Russia conducted cyber attacks against commercial satellite networks in February 2022 to disrupt Ukrainian C2 and has sought to jam commercial SATCOM used by Ukraine.

In November 2021, Russia demonstrated the capability to destroy satellites in LEO with its test of a destructive DA-ASAT missile, which created over 1,500 pieces of trackable space debris and tens of thousands of pieces of potentially lethal but non-trackable debris, which threatens spacecraft of all nations in LEO. Russia is also reportedly developing an air-launched ASAT weapon that can target satellites in LEO. Finally, Russia tested a space-based ASAT capable of kinetically killing satellites in LEO in 2020 and is developing sophisticated dual-use orbital capabilities that could be used to conduct an attack on other countries' satellites.

While the PRC and Russia develop and field these counterspace weapons, both nations simultaneously promote false claims that they will not place weapons in space and have coordinated to propose a flawed legally binding treaty on the non-weaponization of space at the United Nations that would be unverifiable and unenforceable.

Other Challenges: Iran & the Democratic People's Republic of Korea (DPRK)

Iran recognizes the strategic value of space and counterspace capabilities and will attempt to deny the United States its use of space during a conflict. Iran has developed capabilities to jam SATCOM and GPS signals, and Iran's advancements in space launch

vehicle technology could be applied to developing a DA-ASAT missile or could shorten the timeline to an ICBM. The DPRK has also demonstrated non-kinetic counterspace capabilities, including GPS and SATCOM jamming. Under the guise of peaceful use of space, the DPRK has applied data from its space program to aid in the development of long-range and multistage ballistic missiles.

The President's Budget Request for FY 2024

Strengthening Deterrence & Building Enduring Advantages in Space

In October 2022, the Department of Defense released the unclassified version of the National Defense Strategy (NDS), which emphasized that the United States is entering a period of heightened risk and articulated an urgent imperative to strengthen deterrence. In support of this aim, the NDS outlined a strategy of integrated deterrence, which provides a framework for working seamlessly across domains, theaters, and the spectrum of conflict, as well as across all instruments of U.S. power and with allies and partners. The Department's efforts in the space domain undergird all four priorities in the NDS: (1) defending the homeland; (2) deterring strategic attacks; (3) deterring aggression while preparing to prevail in conflict; and (4) building a resilient Joint Force and defense ecosystem that can sustain U.S. strategic advantages.

The Department's FY 2024 budget request is grounded in the understanding that deterrence in space contributes to deterrence on the ground. Space is a key node for integrated deterrence because deterrence strategies rely on credible combat forces, which are underwritten by space. Strengthening deterrence through enhanced mission assurance and building enduring advantages today that sharpen the edge of national security space in the

coming years are, therefore, central to our budget request this year.

Because the space domain empowers the entire Joint Force, the Department is focused on assuring critical space-based missions by accelerating our transition to more resilient architectures and by defending critical systems against counterspace threats. The foundation of mission assurance is resilience -- being able to provide critical space-based services across the Joint Force in competition, crisis, and conflict. By focusing on the ability of space-based services to withstand, fight through, and recover quickly from disruption, DoD can continue to support the Joint Force and deny adversaries the benefit of attack and an information advantage that is critical to success in modern warfare.

Even as the Department builds resilience in space as a means to deter aggression, we must also be prepared to protect and defend our national security interests in space. Consistent with our long-standing policy, the Department will protect and defend U.S. space capabilities, along with those of our allies, partners, and the commercial sector when directed to do so. To effectively deter, and, if necessary, counter and respond to hostile acts in space, the Department is focused on protecting the whole of our space architecture, including ground nodes and networks, in addition to assets on orbit. Defending our national security interests from the growing scope and scale of space and counterspace threats also requires that we strengthen our ability to detect and credibly attribute hostile acts in, from, and to space. Providing space operators with relevant, timely space domain awareness data can help to prevent operational surprise and support efforts to protect and defend space assets.

Finally, the United States must be prepared to protect the Joint Force from attacks enabled by adversaries' increasingly sophisticated and proliferated space-based ISR networks and C2 systems. The Department of Defense is developing a range of solutions across all

domains in order to protect and defend U.S. and, as directed, allied, partner, and commercial capabilities, as well as to prevent adversaries from leveraging space-enabled targeting to attack the Joint Force. This Committee's support for the investments outlined in the President's FY 2024 budget is essential to strengthening deterrence and building the enduring advantages in space necessary to defend our systems against counterspace threats and protect the U.S. Joint Force from adversary hostile use of space.

The DoD's FY 2024 national security space budget request provides for vital space capabilities, resilient architectures, and enhanced space command and control to keep space safe for military, civilian, and commercial operations, while modernizing U.S. capabilities to secure the use of space in the face of increasing threats to U.S. national security space systems. The budget request would continue to strengthen mission assurance by accelerating the transition to resilient-by-design architectures that are diverse, proliferated, disaggregated, distributed, and protected; enhance our ability to fight through disruption by improving defensive capabilities; advance assured access to space across all orbits; invest heavily in research, development, testing, and experimentation to ensure we continue to meet emerging threats; and modernize our space architecture to further integrate space-based services across the Joint Force. Some of the highlights of the FY 2024 budget request include investments in:

- Missile Warning: \$5.0 billion to develop proliferated, resilient missile warning / missile tracking architectures, and next-generation overhead persistent infrared (OPIR) space and associated ground architectures;
- GPS Enterprise: \$1.3 billion for PNT through GPS III follow-on satellite support and development of the next-generation operational control system (OCX) for GPS III and legacy satellites;

- Launch Enterprise: \$3.0 billion to fund 15 launch vehicles and launch range upgrades; and
- Satellite Communications: \$4.7 billion for the Evolved Strategic Satellite Communications (ESS), protected, robust, secure, survivable, and jam-resistant tactical, wideband, and narrowband capabilities, and Space Development Agency's (SDA) proliferated space data transport layer.

Other Space Force investments include ground user equipment, science & technology research, personnel funding, operations and maintenance, and classified investments.

Campaigning in the Space Domain

As the United States invests in critical capabilities, the Department of Defense is actively campaigning in and through the space domain to strengthen integrated deterrence and build advantages with allies and partners as well as the commercial sector, while demonstrating responsible leadership.

Our allies and partners provide an enduring strength and asymmetric advantage that our competitors cannot match. Our allies and partners are essential to our integrated deterrence strategy. We therefore must be able to integrate, plan, and operate with our most capable allies and partners in the space domain. Combined operations require us to be able to effectively share information. The Department is reviewing the classification and disclosure policies of space-related information to overcome barriers to integration with our allies and partners.

One example of how we are strengthening military-to-military ties to our allies is through the Combined Space Operations (CSpO) Initiative, which includes defense leaders from Australia, Canada, France, Germany, New Zealand, the United Kingdom, and the United

States. In this forum, we are identifying ways to improve cooperation, coordination, and interoperability to sustain freedom of action in space, optimize resources, enhance mission assurance, and prevent conflict. During last December's CSpO Principals Board meeting, leaders emphasized the need to continue to increase information sharing to enable space operations and collaboratively address challenges to the safety and security of the domain.

The NDS also highlights the importance of partnering with the commercial sector as part of our integrated deterrence efforts. Commercial services and providers offer innovative solutions across many mission areas at potentially lower cost and with more rapid development cycles. Therefore, the Department is assessing how our missions can increasingly leverage commercial space services as one element of our broader approach to building resilience.

Lastly, day-to-day, the Department is upholding and strengthening the rules-based international order and leading in the development of new responsible behaviors that contribute to the safety, stability, security, and long-term sustainability of space activities. Because the Department is one of the world's most experienced space operators, we play a significant role in the United States' observation and demonstration of responsible space behaviors. The Department's policies and practices, such as the Secretary of Defense's Tenets of Responsible Behavior in Space memorandum, issued in 2021, serve as a key element for U.S. proposals for international measures that contribute to the safety, stability, security, and long-term sustainability of space activities. Our operational expertise also leads us to participate in United Nations' space-related committees as part of State Department-led delegations.

Most recently, the Department assisted in developing the commitment announced by the Vice President in April 2022 not to conduct destructive DA-ASAT missile testing and to work to establish this as a new international norm of responsible behavior in space. This U.S.

announcement led to a December 2022 vote at the United Nations General Assembly that gave overwhelming approval of a U.S.-sponsored resolution calling upon all States to commit not to conduct destructive DA-ASAT missile tests. One hundred and fifty-five countries voted in favor, with nine opposing, including the PRC and Russia. The Department continues to engage with allies and partners to urge the widespread adoption of this commitment. This approach to developing nonbinding norms of responsible behavior that garner broad support can support the long-term sustainability of the outer space environment directly. The Department will continue to demonstrate leadership in both the responsible use of space and stewardship of the space environment.

Conclusion

U.S. space systems are central to our ability to deter our competitors and to prevail in conflict, should deterrence fail. Our competitors have watched us, they have learned from us, they have stolen from us, and they are coming for us. But they are not ready for us today. The investments in the FY 2024 budget request are essential to equip the Department of Defense with the capabilities necessary to ensure they are not ready for us tomorrow. Thank you to the Committee for its tireless dedication to our national security and our servicemembers, and I look forward to answering your questions.