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NATIONAL SECURITY SPACE PROGRAMS

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SUBCOMMITTEE ON STRATEGIC FORCES

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NATIONAL SECURITY SPACE PROGRAMS

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ARMED SERVICES,
SUBCOMMITTEE ON STRATEGIC FORCES,
Washington, DC, Wednesday, May 14, 2025.

The subcommittee met, pursuant to call, at 3:30 p.m., in room 390, Cannon House Office Building, Hon. Scott DesJarlais (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. SCOTT DESJARLAIS, A REPRESENTATIVE FROM TENNESSEE, CHAIRMAN, SUBCOMMITTEE ON STRATEGIC FORCES

Dr. DESJARLAIS. Today's hearing will come to order.

Pursuant to Rule 4(b)(3), members of the House Armed Services Committee who are not members of the subcommittee are allowed to participate in today's hearing and will be recognized after all subcommittee members have had the opportunity to ask questions.

The Strategic Forces Subcommittee meets today to receive testimony on the policies and programs related to the national security space activities.

Good afternoon to our witnesses, and thank you for joining us today.

Before us, we have—and completing the committee hat trick is Ms. Andrea Yaffe, 3 weeks in a row. Thank you—the Acting Assistant Secretary of Defense for Space Policy within the Office of the Secretary of Defense. We have Dr. Chris Scolese, the Director of the National Reconnaissance Office; Vice Admiral Frank Whitworth, the Director of the National Geospatial-Intelligence Agency; and Major General Stephen Purdy, the Acting Assistant Director of the Air Force Space Acquisition/Integration. We appreciate your time today and your service.

Dr. Scolese, I understand this will be your last hearing with us. We appreciate your service and the good work you have done at the National Reconnaissance Office.

Unfortunately, we still do not have programmatic details for the President's budget request for fiscal year 2026, but the top line number did give us some hints.

The space systems and people provided by the organizations you all represent are foundational to the security of our Nation and the joint force. This is why it is so important that we have the ability to fight and win in space.

It is not enough to simply provide important information like missile warning, Positioning, Navigation, and Timing, and nuclear command and control in all stages of the conflict. Now, we must be able to hold at risk the Chinese Communist Party kill web that

enables space-based targeting and tracking of our terrestrial forces and extends the range and accuracy of their weapons. Our ability to break this kill web will determine the success or failure of the joint force and its objectives in the Indo-Pacific. That requires having the right systems and relevant timeline.

I want to associate myself with Chairman Rogers and Ranking Member Smith, who have been calling attention to it—not only how we buy things and the broken acquisition processes, but also the people doing the acquiring. Specifically, regarding the Space Force, they have raised concerns with how these acquisition professionals are developed, trained, and given opportunities to advance in their careers.

As we work to make sure we are developing a force that can fight and win in space, we must also make sure that the platforms they will need to break those kill webs are delivered on time and on budget. That starts with having highly trained acquisition professionals.

Every guardian supports the warfighting mission. This means that time spent in Space Systems Command figuring out how to bring more nontraditional companies into the mix is just as important as time spent at Delta 9 conducting orbital warfare.

This subcommittee is proudly where Space Force got its start. We will, in a bipartisan way, continue to push to make sure that it stays the course and achieves that original vision of improving space acquisitions. I look forward to hearing updates today from our witnesses on some of your programs and how you are working to speed up that acquisition timeline so that we can deliver needed systems to the force.

Major General Purdy, I am glad to see that you aren't standing still, despite serving in an acting capacity. Your recent announcement of the new acquisition plan for the follow-on to the Geosynchronous Space Situational Awareness Program, or GSSAP, that calls for more commercially developed technology and diversity to the supplier base is just the type of innovation we need.

Dr. Scolese, the National Reconnaissance Office's rapid deployment of its proliferated constellation of more than 150 satellites over the past 2 years has not only given you the largest government constellation but has been a great example of how we can move quickly.

Vice Admiral Whitworth, the recent awarding of task orders for commercial imagery analysis on your Luno A program and the funding of the Luno B program focused on commercial AI are exactly the kind of commercial integration we need to stay ahead of our adversaries.

Finally, Ms. Yaffe, all these efforts are underpinned by our policies in space. How your office is planning for the increased testing, training, and changing operational norms to support these new systems and warfighting doctrine will be incredibly important.

With that, I now recognize my good friend and ranking member, Mr. Moulton, for his opening remarks.[The opening statement of Dr. DesJarlais can be found in the Appendix on page 29.]

**STATEMENT OF HON. SETH MOULTON, A REPRESENTATIVE
FROM MASSACHUSETTS, RANKING MEMBER, SUB-
COMMITTEE ON STRATEGIC FORCES**

Mr. MOULTON. Thank you very much, Chairman DesJarlais, and welcome to our panel of witnesses.

Dr. Scolese, I understand this will be your last hearing in front of this subcommittee. Thank you for your dedicated service to our Nation and your steadfast commitment to transforming the National Reconnaissance Office into an organization prepared to face the threats we face in space today and into the future.

Our national security space architecture is undergoing a significant transformation, and it must transform, because life as we know it relies on satellites. The Global Positioning System—developed, launched, and operated by the Space Force—is the most obvious. Most people don’t realize all the things that depend on Global Positioning System. For example, it provides the timing information that makes our entire financial system function. Without it, you wouldn’t be able to use your credit card, withdraw money from a bank account, and Wall Street would cease all trading.

It is also no secret that almost every weapon system in our inventory depends on space, whether for communications, navigations, or intelligence. Over the past 30 years of United States operations in the Middle East, Russia and China have watched our reliance on space and have developed, deployed, and demonstrated capabilities to hold our satellites, and therefore, our way of war at risk. The People’s Republic of China has now launched over 1,000 satellites into orbit, 70 percent of those in the last 5 years, and they include systems that could be used as weapons in space.

And as we all know now, Russia is developing a space-based nuclear weapon. If launched, it would be in direct violation of the Outer Space Treaty and, if detonated, it would degrade or destroy nearly every satellite in its path. As I noted before, that includes any space-based interceptor constellation that might be part of the President’s Golden Dome. One push of a button could destroy trillions of dollars of investment and make Low Earth Orbit unusable for years. Obviously, any Nation willing to launch a massive nuclear attack on us would not hesitate to quickly take out our defenses.

Understanding how urgent this race for space superiority has become, the last administration continued diversifying Department of Defense’s space systems by leveraging a massive United States advantage, our rapidly expanding commercial space industry. Across the board, there are companies outpacing Department of Defense innovation in satellite communications, remote sensing, space domain awareness, and defending our satellites on orbit. Yet, despite consistent pressure from this subcommittee, the culture shift to maximize the benefit of commercial space continues to meet considerable resistance.

I am especially concerned about the rumor that the National Reconnaissance Office, at the direction of the Office of Management and Budget, has slashed commercial imagery funding lines in fiscal year 2026 budget. More broadly, the Department of Defense’s flat top line for fiscal year 2026 undoubtedly means that the Space Force will be taking a cut. I was willing to criticize the previous

administration for failing to invest more in space, and I will criticize this one for the same failure. This mistake is especially stark when considering the billions thrown after Golden Dome with no plan or forethought.

I know the White House is putting all their hopes and dreams into the, quote, “One Beautiful Bill” for reconciliation, but as my Republican colleagues know, this bill faces serious hurdles and there is immense risk in assuming that money will be there. Cuts to the Space Force would be catastrophic.

I am also seriously concerned about the health of the workforce carrying out these vital missions. Civilians perform critical roles in areas like contracting and engineering, and the Space Force has been hit disproportionately hard by this administration’s goal to demonize Federal employees.

As I said before, America has a robust commercial space sector. Most of these people could work fewer hours for a lot more money at these companies, but they work for the Department of Defense because they care about the mission. Space Force has already lost over 14 percent of its civilian acquisition workforce at Space Systems Command thanks to Elon Musk, and the most talented people with the most other options generally make up the voluntary departures under DOGE.

I am sure Mr. Musk has no problem with having more talented people to hire while having lower oversight of his SpaceX contracts, but this careless decimation of the Space Force civilian workforce is unacceptable and we must stop the bleed.

These losses are compounded by concerns regarding the future for early career acquisition guardians. As the Space Force builds out its new officer pipelines, I am concerned that prioritizing operations over acquisition, just as the chairman mentioned, will negatively impact the Department’s ability to smartly and flexibly acquire the space capabilities we need and lower the expertise within the service to do so.

If guardians continue to hear from their leadership that operations is the only way to contribute to the Space Force, they have options to go work for any number of space companies who heavily recruit them today. I recall that the committee stood up the service part in part because of a desire to change the historically poor track record of space acquisitions.

Space is a fascinating and infinite domain that, until recently, we only really experienced through the lens of science fiction. But in reality, space has been a part of our daily lives since the dawn of the Space Race. Our warfighters everywhere—on the ground, under the sea, in the air—depend on space. I look forward to today’s discussion with our witnesses on how best to maintain United States superiority in space and how we can address the many concerns that challenge it.

Thank you, Mr. Chairman.

Dr. DESJARLAIS. I thank the ranking member for his comments.

We will now move to opening statements from our witnesses. I would note that your full, prepared statements will be made part of the record, but you will each have 4 minutes to make your opening remarks today.

Ms. Yaffe, let’s begin with you.

**STATEMENT OF ANDREA YAFFE, ACTING PRINCIPAL DEPUTY
ASSISTANT SECRETARY OF DEFENSE FOR SPACE POLICY,
OFFICE OF THE SECRETARY OF DEFENSE**

Ms. YAFFE. Thank you. Chairman DesJarlais, Ranking Member Moulton, and distinguished members of the committee, thank you for inviting me to testify before you on the Department of Defense's national security space programs on behalf of the Office of the Secretary of Defense. I am honored to appear alongside my colleagues from the Department of the Air Force and the intelligence community. I am certainly pleased to be back.

The United States seeks a secure, stable, and accessible space domain to allow for its continued use for commercial, scientific, and national security activities. Space and space programs remain central to the Department's core mission of deterring conflict and ensuring our national security.

Space systems enable our nuclear forces, our nuclear command, control, and communications, or NC3, strategic warning, missile defense, communications, global force protection, and intelligence surveillance and reconnaissance systems. Space will also be essential to the Golden Dome for America architecture. The President, Secretary, and indeed, the entire joint force rely on the capabilities provided by our space architecture each day.

China and Russia recognize the United States' reliance on space, and they are both developing and fielding counter-space capabilities designed to deny our freedom of action in space and to target U.S. forces on earth. These developments pose an increasing and unacceptable threat to the United States and our allies and partners, including the commercial space sector.

Space superiority is thus crucial to achieving peace through strength in the face of these threats, principally through deterrence and defense in peacetime, but also by enabling the joint force to prevail at all stages of conflict if deterrence fails. Specifically, space superiority is integral to the Interim National Defense Strategic Guidance's priorities of defending the homeland and deterring China by denying their ability to confidently hold the joint force at risk.

Our ongoing investments seek to ensure the Department can establish space superiority, assure critical space-enabled missions, retain capabilities to deny adversary hostile uses of space, and ensure the joint force continues to have access to and freedom to operate in space.

Space also presents unique opportunities to integrate the commercial sector and to increase burden-sharing with our allies and partners. The innovative capabilities, scalable production capacity, and rapid technology refresh rates of the United States commercial sector are competitive advantages that the Department is leveraging to enhance our national security space programs. There is tremendous potential to build on the success of commercial providers to increase the lethality of the joint force and enhance our ability to defend the homeland and to deter China.

As for allies and partners, they help ensure the Department is effectively postured and positioned around the globe to address the growing magnitude and vectors of threats in, from, and to space. The aspiration of other countries to invest in space security has

given rise to new opportunities to cooperate across the spectrum of conflict, share the burden of defense, and strengthen deterrence.

The Department remains committed to making the necessary investments in our space programs to deter our adversaries and if deterrence fails, to prevail in conflict. This mission requires sufficient and consistent funding and support. Thank you for your dedication to our mission and to our servicemembers and for the opportunity to testify to you today alongside my distinguished colleagues. I look forward to answering your questions.

[The prepared statement of Ms. Yaffe can be found in the Appendix on page 31.]

Dr. DESJARLAIS. Thank you, Ms. Yaffe.

Dr. Scolese, you are recognized.

STATEMENT OF DR. CHRIS SCOLESE, DIRECTOR, NATIONAL RECONNAISSANCE OFFICE

Dr. SCOLESE. Thank you. Chairman DesJarlais, Ranking Member Moulton, and members of the subcommittee, I am honored to join you along with my colleagues, Acting Principal Deputy Assistant Secretary Yaffe, Major General Purdy, and Vice Admiral Whitworth, and to represent the people of the National Reconnaissance Office.

For 64 years, the National Reconnaissance Office has been at the leading edge of innovation, developing space-based capabilities that advance our national security. Today, the National Reconnaissance Office is building on that legacy and moving faster than ever before, thanks to the technical expertise and talent of our small and highly effective workforce.

Today, we are accelerating build-out, launch, and operations of the world's most capable, resilient, and technologically advanced satellite constellation. We are strengthening the capabilities and security of our ground architecture, and we are deepening our partnerships across government, private industry, academia, and with our allies.

Our mission is clear: To achieve the President's objective of peace through strength. This is especially critical as our competitors are seeking to deny our strategic advantage in space. With Congress' continued support, we will ensure America remains the world's leader in space-based intelligence, surveillance, and reconnaissance.

Over the past 2 years, the National Reconnaissance Office has dramatically transformed our space operations, launching more than 200 satellites to create the largest and most capable government constellation in our Nation's history, providing data to our partners sitting with me here today as well as to our partners in the National Security Agency and other organizations. With the support of Congress, the National Reconnaissance Office will continue to invest in capabilities that are helping to solve some of the toughest intelligence challenges of our time.

Employing advanced technologies makes it harder for our adversaries to hide, giving the United States decision advantage. Using different orbits and proliferating our systems allow us to track more objects more reliably. Diversifying systems in space and on the ground increases resilience. Employing AI techniques and ad-

vanced data systems allows us to provide more information, faster to users, especially intelligence analysts, policymakers, and warfighters, allowing them to make critical decisions with the best information.

Developing leading-edge research in areas like photonics, quantum sensing, advanced materials, and Artificial Intelligence/Machine Learning prepare us for the future. All of these advanced capabilities, as well as those in development, allow us to support current challenges like the crisis in Ukraine and support the interdiction of narcotics trafficking as well as preparing for the future.

The National Reconnaissance Office's talented workforce is delivering these capabilities, but we can't do it alone. We are continuing to build partnerships across the government, academia, industry, and with allied nations that allow us to label—allow us to enable us to leverage innovative technologies.

Working with intelligence community partners, our world-class constellations and ground architectures will fuse data collections. For example, working with Defense Intelligence Agency, we accredited tools and capabilities to enable data fusion, improving intelligence outcomes. We have a close and productive relationship with National Aeronautics and Space Administration and the United States Space Force to support coordinated investment in space.

Through an increasing number of commercial partnerships, we are leveraging commercial satellite buses, launch services and data, from electro-optical to radar and radio frequency, as well as other phenomenologies. We are fusing commercial data streams with national data streams and making them more readily available to our customers.

In conclusion, the National Reconnaissance Office's continued success in maintaining our competitive advantage and keeping America safe depends on our continued ability to innovate, our investments in our workforce and our partnerships, and on Congress' continued support for the Nation. Our responsible stewardship of taxpayer dollars is best illustrated by our 16th consecutive clean financial statement audit.

On behalf of the entire National Reconnaissance Office workforce, I appreciate the opportunity to appear before you today. Thank you for your time, and I look forward to answering your questions.

[The prepared statement of Mr. Scolise can be found in the Appendix on page 45.]

Dr. DESJARLAIS. Thank you, Doctor.

Admiral Whitworth, you are recognized.

**STATEMENT OF VICE ADMIRAL FRANK D. WHITWORTH,
DIRECTOR, NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY**

Admiral WHITWORTH. Good afternoon. Distinguished members of the subcommittee, I am honored to appear before you with my teammates.

The National Geospatial-Intelligence Agency's, or NGA's mission is the exploitation and analysis of imagery and geospatial information to describe, assess, and visually depict features and geographically referenced activities on or about the earth and in space. The

geospatial intelligence, or GEOINT for short, we produce provides warfighters, policymakers, intelligence professionals, and first responders the information they require to develop and carry out national security objectives that defend the homeland, secure United States interests abroad, and protect Americans serving in harm's way.

Space-based systems play a critical role in supporting the United States National Security Strategy and are a primary source for the data National Geospatial-Intelligence Agency gathers to develop and produce geospatial intelligence. Our global competitors also share an appreciation for the space domain and value the advantage that space-based platforms offer to further their own objectives. Indeed, China's and Russia's space activities have become increasingly concerning, as both have developed and fielded counter-space capabilities, including progressively more capable, multi-sensor systems designed to hold United States space-based systems at risk.

National Geospatial-Intelligence Agency's motto, "Know the World, Show the Way... from Seabed to Space," reflects our responsibility to understand and distinguish these developments in a dynamic, changing world, not only in space, but across all domains. We achieve this with a team that is spread across more than 200 sites, including more than 20 countries around the world, embedded at most warfighting headquarters, many government agencies, numerous service intelligence centers, and at every combatant command and intelligence agency.

Gathering the data and imagery necessary to characterize the activities and operations of our adversaries from the Earth to space is not a simple task. The key to that effort is National Geospatial-Intelligence Agency's informed collection orchestration process. This process, developed with centuries of collective expertise, is how National Geospatial-Intelligence Agency professionals and mission partners choreograph an increasingly complex and capable constellation of space-based geospatial-intelligence assets.

In the past year, National Geospatial-Intelligence Agency took a giant leap to improve this process, establishing the Joint Mission Management Center, JMMC, with the United States Space Force, joining warfighters and intelligence professionals under National Geospatial-Intelligence Agency's roof to decrease the gap between collection requests and delivery. A Joint Mission Management Center is central to ensuring our warfighters and intelligence professionals receive the imagery analysis they need and deserve.

The expanding opportunities for space-based geospatial-intelligence collection, including national technical means and commercial sources, are generating a day-to-day luge that will, if we harness it, allow us to support the demands and needs of warfighters in the future. Through programs like National Geospatial-Intelligence Agency's Maven, we are collaborating with warfighting headquarters around the world to continue providing the right geospatial-intelligence data when and where it is needed.

Finally, I would like to highlight National Geospatial-Intelligence Agency's responsibility for guaranteeing the accuracy of Global Positioning System and maintaining the World Geodetic System 1984, or WGS 84, at reference frame, the backbone for all geolocation.

These efforts are central to improving Global Positioning System geolocation accuracy for warfighters and government civil agencies alike, guaranteeing assured precision, navigation, timing, and targeting.

In closing, National Geospatial Intelligence Agency relies greatly upon data obtained from space. As our Nation sharpens its focus in the domain, we embrace our partners at U.S. Space Force, United States Space Command, and the National Reconnaissance Office, ensuring that we maximize the potential of geospatial-intelligence to help understand adversary space and counter-space threats. Thank you, and I look forward to answering your questions.

[The prepared statement of Admiral Whitworth can be found in the Appendix on page 53.]

Dr. DESJARLAIS. Thank you, Admiral.

General Purdy, you are recognized.

STATEMENT OF MAJOR GENERAL STEPHEN PURDY, ACTING ASSISTANT SECRETARY OF THE AIR FORCE FOR SPACE ACQUISITION AND INTEGRATION, OFFICE OF THE SECRETARY OF THE AIR FORCE

General PURDY. Chairman DesJarlais, Ranking Member Moulton, and distinguished members of the subcommittee, thank you for inviting me to testify today. As military deputy, I first want to thank you for the National Defense Authorization Act authority to serve as the acting Service Acquisition Executive. It has allowed me to give direction, sign off acquisition plans, and actually make substantive change, and I really do thank you for that.

I tell our acquisition community that it is our job to deliver integrated capability for the warfighter, and we have had multiple successes over this past several months. Back in August, we launched two Enhanced Polar System - Recapitalization payloads that ride-shared on Norway's satellites. These provided calm in the northern polar region, and this international partnership allowed the United States Government to save \$900 million.

Over the year, our newer operations test and training infrastructure—our test and training System Program Office organization has been able to deliver multiple trainers and multiple training injects into our war games to satisfy operational desires.

In January, the Unified Data Library provided critical support to the Presidential Inauguration, supporting counter-small Unmanned Aircraft Systems operations, ingesting over 1.4 million data tracks.

In April, we had a big month. We launched our first National Security Space Launch Phase 3 mission. It was for the National Reconnaissance Office. It was only 6 months after the award. Later in April, Space Force operationally accepted the weather system follow-on that helped us close six of 12 gaps. And then finally, we operationally accepted the S2E2 system, which is a mobile ground system that supports Overhead Persistent Infrared.

But, in addition to delivering capability, it is also our job to figure out ways to go faster. Over the last 2 years, the Space Force has increased our other transaction authorities by 470 percent. It increased our software pathways by 350 percent. An example from

last year, the Resilient-Global Positioning System, we went from request for proposal to award in 71 days, mimicking the Space Development Agency's type of timelines. And speaking of Space Development Agency, they continue to press forward with their speedy acquisition contract timelines as well as their launches coming up this summer.

Additionally, we are big fans and use—work with SpaceWorks quite frequently on the strategic funding increases and tactical funding increases and space based infrared system. Over 1,000 contracts have been awarded through that mechanism, and excitingly, we have been able to leverage almost \$1 billion of venture capital money. External funds have been able to be collaboratively used for Space Force missions.

In addition to other collaboration with the Space Force, we are using Service Acquisition Executive authorities in addition to the Space Force requirements authorities and going after program requirements, figuring out ways that we can dial down requirements and get after the commercial—the speed of commercial delivery. Our next plan is to go after our operational acceptance and test timelines as well.

Most importantly on the acquisition workforce—it was mentioned here a few times—we are working workforce career plans for both the program managers and the engineers, and we are thinking through how we can get after longer program managers timelines, both early in their career to get after the reps and sets needed to understand our business, and then later in their career when they are actually running as a program manager.

And finally, my deepest thanks to the entire acquisition, engineering, financial, contracting, and legal communities. These communities work extremely long hours under stressful situations. They are constantly dealing with new companies and new ways of business, and they do tremendous. And so, my deep thanks to all their work.

And, finally, I look forward to all your questions. Thank you very much.

[The prepared statement of General Purdy can be found in the Appendix on page 60.]

Dr. DESJARLAIS. Thank you all for your opening remarks. We will now turn to member questions. I will start by recognizing myself for 5 minutes.

General Purdy, you touched on some of this in your opening remarks, but I mentioned your recent announcement about the Geosynchronous Space Situational Awareness Program acquisition plan. Can you talk a little bit about how you approached that and specifically how you worked with the requirements community?

General PURDY. Yes, sir. That is actually a pretty exciting accomplishment that we have been able to do.

So that started from last year's efforts on the Resilient Global Positioning System program where we explored the commercial capability that was there, and we found that bus prices—satellite bus prices were less expensive in Medium Earth Orbit than we thought, and we found that there was more capability for payloads than we thought.

So then, last year, we did an RFI—request for information—out to industry on the Geosynchronous Space Situational Awareness Program, and we got quite a wide variety of responses. We weren't able to proceed due to classification issues. So then I worked with United States Space Command and the Space Force requirements side and the leadership to understand what their trade-offs might be. They expressed a willingness to trade off requirements.

So then I went back to the System Program Office, and the System Program Office listed out all of the different current activities and the speed that they could do with the current system, and then what the commercial side could do and, if we turned off certain requirements, how much faster they could go.

That revealed interesting data, to include they could go—they could shave off about a third of the time and over half the cost.

So we packaged that up and worked with the Space Force requirements community. They agreed to that, signed off on that requirements drop, and then we were able to get it out to the System Program Office. So we are off working now with that program office to go start off a more commercial line.

And when I say “commercial” in this particular aspect, just to clarify, this is accomplishing the same Geosynchronous Space Situational Awareness Program mission. Our operators will fly the Geosynchronous Space Situational Awareness Program system using the same ground systems and data they do now, but these would be using faster commercial build times, cheaper build times, and cheaper, less expensive parts in order to bring that together in a faster sense.

Dr. DESJARLAIS. On the Resilient Global Positioning System, what requirement does it fill for the service? And I think you touched on it, but how has that acquisition process been different?

General PURDY. Sure. So, on our Global Positioning System, the Resilient Global Positioning System—so the requirement we are going after there is something that our Space Warfighting Analysis Center analytical arm in the Space Force and the Defense Science Board both flagged, and that is a resiliency need for the Global Positioning System enterprise.

It is one of our most proliferated in the current sense, but yet, it will soon be one of our least proliferated. And it is vulnerable. Given the fact that the Global Positioning System constellation is relatively small a number, it is reachable by direct-ascent tech Anti-Satellite weapon, and supports such an important military and commercial mission.

And so, the initial thinking was we used National Defense Authorization Act-granted Quick Start authority to start up the Resilient-Global Positioning System program, and we are looking to add more resiliency and more numbers. And that is the basic intent.

The acquisition plan was, essentially, we went out to industry. We actually didn't think that we were going to get much, to be honest with you, and it was a surprise to us and a major learning portion for us—learning event last year. The satellite prices had—they were low in Low-Earth-Orbit already, but they had—they were lowering in Middle-Earth-Orbit. And so that convinced us that we should proceed with it.

The results have actually been more surprising and encouraging than we thought. The buses actually bring a higher power level than our current program of record does, which allows us to punch through jamming in a better sense. And so, we can achieve better results, we think, over time, going after these commercial buses. So that has actually caused me to think for our main-line Global Positioning system—we are actually looking at that for alternative ways to get after that like our Global Positioning System.

Dr. DESJARLAIS. Okay.

Dr. Scolese, I have got about a minute here, but can you talk a little bit about the role that the Space Force guardians play in the work of the National Reconnaissance Office and what do you see is the value both the National Reconnaissance Office and Space Force get out of that arrangement.

Dr. SCOLESE. Certainly. Yeah. They play a very vital role in it. As you know, about a third of our workforce is military, and the largest component of that military force are the guardians. And they serve roles principally in engineering and acquisition for developing some of our, you know, most important systems, as you are well aware. Particularly, as I mentioned, the roughly 200 satellites we have launched over the last couple of years—they were largely done with guardians because we knew where the ultimate utilization of them is.

At the same time, they also bring the wealth of knowledge of what the Space Force needs so that we can go off and work together. And I believe that working together, we help grow them and show them our acquisition philosophy, and they take that back to the Space Force as well, and we also gain from them their learning from Space Force. So they are a very vital part of our organization.

Dr. DESJARLAIS. Thank you. My time has expired. I now recognize the ranking member for his questions.

Mr. MOULTON. Thank you very much, Mr. Chairman.

We have had a lot of discussions on this committee about how space is becoming not just strategically important, but tactically important to the warfighter.

Vice Admiral Whitworth, in your opening statement, you emphasized the global presence of National Geospatial-Intelligence Agency personnel embedded with warfighters. How specifically are those personnel training or educating warfighters to better leverage commercial geospatial-intelligence capabilities?

Admiral WHITWORTH. Thank you, sir, for the question.

So at every combatant command, JTF, joint task force, every service intel center, every service, we are going to have what we call an National Geospatial-Intelligence Agency support team that makes—the essence of your question—they are calling how to ensure that they get as much geospatial-intelligence at a place where it can provide decision advantage for that commander.

Your specific question is so important. When you think about the four parts of geospatial-intelligence, we have got national technical means, we have got the proliferated architecture of Department of Defense, we have got international contributions, and then there is commercial. Commercial is potentially so agile that it can fill gaps we may not otherwise have. It is also important to the mission and

being able to express maybe to partners in a very immediate way, and in an unclassified way, the meaning of what is happening in the world without giving up something that is more exquisite than national technical means.

Mr. MOULTON. Should Congress consider expanding tactical, surveillance, reconnaissance, and tracking authorities to allow Department of Defense elements to procure commercial data directly, especially raw imagery, to better meet these time-sensitive operational requirements?

Admiral WHITWORTH. It is a valid point, sir, and I would just offer, we do have a responsibility at least at National Geospatial-Intelligence Agency and I am sure that—and this is consistent with what I have received from oversight—to ensure that a taxpayer only pays once. So, as we establish that denominator, somebody has to actually know what is coming from National Technical Means of Verification, what is coming from the proliferated architecture, and then what is left that we still haven't bought to ensure we don't buy it twice.

So I would just caution that we not create a situation where we find—

Mr. MOULTON. I understand the concern, but, I mean, it is 2025. Like, this should be pretty easy to figure out with technology—

Admiral WHITWORTH. That is right, sir.

Mr. MOULTON. —and we just need to do it.

Admiral WHITWORTH. Yes, sir. And, with the advent of a system that we call "Slim Jims," all of the combatant commands actually can use Slim Jims to see that denominator. That is right.

Mr. MOULTON. General Purdy, Dr. Scolese, do you have any comments on this question?

General PURDY. So it is on the Space Force's side to figure out sort of that relationship and the ops background; so I am going to focus more on the acquisition side.

I know on our Tactical Surveillance, Reconnaissance and Tracking Program piece, we have got relationships where we can go—take a quick turn task, we can feed the data with National Geospatial Agency, and there are pending memorandum of understanding that are heading in that direction.

And I will defer to Dr. Scolese.

Dr. SCOLESE. Yeah. And we work closely, obviously, with National Geospatial Agency as well as the Space Force to make sure data is available, but I would also add that we also work with National Security Agency because we also are collecting Radio Frequency data as well. So commercial plays a vital role, and, you know, we believe we are supporting all the organizations that need it.

Mr. MOULTON. General Purdy, in your opening remarks, you state the Space Force's decision to repurpose acquisition lieutenant billets to support the officer training course and operational tours combined with looming reductions in the civilian workforce—we have already seen 14 percent—and advisory and assistance contractor reductions—they all increase the risk to program execution. Can you provide me examples of where you are taking risk due to reduced personnel?

General PURDY. So I don't have specific, like, examples and effects for you, I guess I would say. It is more the risks that have been sort of materialized. So a combination of factors.

So the Officer Training Course creation. Obviously, we have moved out lieutenants and we have put them into Officer Training Course. By the way, as the acquisition side, we call that OpEx for everybody, and, generally speaking, we support that operational experience. That has created a gap. Our plan was to fill that with civilian hires. That has obviously run into a bit of a problem in addition to—as we take Program Managers and Financial Managers and Personnel reductions. [AR1]

And so we haven't had a chance to fully absorb and understand the numbers yet. You gave a number in your opening talk. I haven't actually received all those yet from the different organizations. I know anecdotally, with speaking with Space Development Agency, with speaking with AFWERX and SpaceWorks, with speaking with Space Systems Command, there is, I would say, trouble brewing. We are worried about the numbers. We are worried that we can execute our program offices. The program offices always vary a little bit based on their intensity and size. So you can dial a little bit, but there is a limit to it.

Mr. MOULTON. Well, there is obviously bipartisan concern the committee—

General PURDY. Yes, sir.

Mr. MOULTON. Thank you, Mr. Chairman.

Dr. DESJARLAIS. Thank you.

The chair recognizes the gentleman from South Carolina, Mr. Wilson, for 5 minutes.

Mr. WILSON. Thank you, Dr. Chairman DesJarlais, for your leadership, and, indeed, this is bipartisan as we work with Congressman Moulton and everyone here.

And we are so grateful, again, for each of you being here today.

And it is particularly important because, sadly, the world is in a conflict we did not choose, between dictators with rule of gun invading democracies with rule of law. It began on February 24, 2022, with war criminal Putin invading Ukraine, and then it proceeded with mass murder on October 7, 2023, when the Iranian puppets invaded Israel with the catastrophic consequences there.

War criminal Putin and the Chinese Communist Party continue to expand and modernize their space capabilities, with war criminal Putin acknowledging that other countries' commercial infrastructure and outer space used for military purposes can and will become a legitimate target. The United States must maintain the ability to be ahead of our adversaries in space to make sure that we have peace through strength.

With that in mind, Secretary Yaffe, you have been correctly explaining the rapid rise of the adversary counter-space capabilities, especially for war criminal Putin and the Chinese Communist Party. As you mentioned in your statement, quote, "The Department remains concerned that Russia is developing a new satellite meant to carry a nuclear weapon as an anti-satellite capability," end of quote.

With these remarks, it is inherently destabilizing. What is the Department of Defense assessment of the Chinese Communist

Party and war criminal Putin's ability to have intent of such capabilities?

Ms. YAFFE. Thank you, sir. I am sorry. When you said, "intent of such capabilities," you raised the Russian one. Are you asking about the breadth of counter-space capabilities?

Mr. WILSON. Yes. Yes.

Ms. YAFFE. Yes, sir. Thank you for the question. I mean, our concern is that Russia and China are both pursuing a breadth of capabilities intended to hold our space assets at risk. Given that they know the advantages that we derive from those assets, they want to deny our ability to access those services probably through both reversible and irreversible means. We know that we need to protect these assets, protect both our critical space-based assets and the joint force against space-enabled threats from their space assets.

Mr. WILSON. And what is the status of our ability to counteract that?

Ms. YAFFE. Sir, it depends certainly on the threats that we are facing. But, from our perspective, we need to be arrayed against the breadth of threats that we face from both of them. Certainly, we do continue to spend a lot of time being concerned about the one Russian space system where they seem intent on putting a nuclear weapon in space, but we also need to be prepared for ground-to-space threats, on-orbit threats, et cetera.

I mean, what we have said and we continue to say is we need to have a breadth of assets in all domains to protect our space-based assets and to protect our personnel. These may include both reversible and nonreversible, kinetic/non-kinetic options. But it is important that we are able to give the Secretary of Defense and President options if required and if we face these threats in action from our adversaries.

Mr. WILSON. Well, thank you so much for your insight.

And Vice Admiral Whitworth, the capabilities of your agency or department to provide vital edge against our adversaries on ground and space domain. We are fortunate that our country is full of innovative companies in the private sector who are willing to work with the government to provide the capabilities for national security.

How do you coordinate your efforts to acquire commercial space capabilities, or license commercial data, from other organizations within the Department of Defense and the intelligence community?

Admiral WHITWORTH. Thank you, sir, for the question. And this goes to our emphasis on commercially available—especially for us—for policy analytics. We certainly look for the best analytics we can get for geospatial-intelligence, and we have many things available to us: Commercial solutions offerings, they are very speedy. Bailment agreements are a way that we can see—try it on for size and see if it works for both size. Indefinite Delivery, Indefinite Quantity, of course, is the tradition.

We are always looking for the best and brightest, and this is evidenced by Luno A and B, which is upwards—that has an Request For Proposal of upwards of \$500 million, and we have got now task orders for that in the maritime domain.

Mr. WILSON. That is really encouraging. And, again, with the commercial capabilities, what is—or are they ahead of government capabilities? How do you assess their capability?

Admiral WHITWORTH. I think the importance here is we are insatiable in coverage. And so I don't think I am in a position to say one is better than the other, but coverage is the name of the game here. And so we are a bit insatiable. I have said it in the past. We kind of want it all.

Mr. WILSON. Thank you very much, and I yield back. Thank you.

Dr. DESJARLAIS. I thank the gentleman.

The chair now recognizes the gentleman from California, Mr. Whitesides, for 5 minutes.

Mr. WHITESIDES. Thank you, Mr. Chairman.

Let me start by recognizing my friend Dr. Chris Scolese. We have known each other for over 15 years, and his service to the country across a wide range of government agencies is exemplary. You know, thank you for your service, Chris.

So, to jump into it, General Purdy, I just wanted to add my, I guess, voice to concerns that we provide a promising career advancement pathway for our space acquisitions workforce. I know you are deep in the midst of that, but I think what you are hearing from all of us on the Armed Services Committee is that that is clearly something that we are concerned about, and I just wanted to add my voice to that.

To Admiral Whitworth and Dr. Scolese, in terms of the commercial remote sensing budgets, we have heard reports that the fiscal year 2026 budget request will include cuts to National Reconnaissance Office and Space Force commercial remote sensing funding. This is concerning, obviously, partly because there is so much going on in space and there is such a great demand for this data, but it also seems to go against stated administration priorities, and we also want to make sure that we are maintaining a sort of wide base of suppliers.

Can either of you sort of speak to the reality of that? We see things in the news. Is it real, and how are you working to free up legacy requirements and budget to kind of keep pushing the ball forward on these things to enable traditional systems to focus more heavily on the things that only the United States Government can do?

Dr. SCOLESE. You said it right. We want to focus the government effort on only those things that we can do. So we very much value the commercial capabilities and intend to keep on using those. It is largely based on demand, of course, but commercial is absolutely critical to what we are doing. And I would add it is not just the commercial imagery. It is also commercial Radio Frequency and also newer phenomenologies as we are working with that industry to go off and help advance those.

But even further, it has helped enable our proliferated architecture. As General Purdy mentioned earlier, we are finding that commercial buses are not only available, but they are also capable of doing a lot of what our missions require, and they are available at a much lower cost than going off and developing a brand-new bus. And you will see those in our proliferated architecture that we are deploying today, and you will also see it as we are going forward

and we are advancing the same thing in our signals-intelligence architectures.

Mr. WHITESIDES. Thank you.

Admiral Whitworth, would you like to add anything to that?

Admiral WHITWORTH. At this time, I don't think so, because it is not our purview to actually enter a contract on pixels for commercial. So I would defer to Chris on that one.

Mr. WHITESIDES. Okay. Sounds good.

Major General Purdy, with all of the sort of uncertainty coming out of Space Development Agency over the last several months, can you give us a status update on their efforts to provide missile warning/missile tracking capabilities as part of the broader Space Force missile warning/missile track architecture?

General PURDY. Sure. Space Development Agency has continued to forge ahead with their Tranche 1 activity. They continue to finalize testing on their Tranche 0, which was a test activity. So that has continued to work through their testing of the comm and the missile warning test. On the Tranche 1, that is coming in finally. They should start their launches this summer—toward the tail end of this summer, and they will launch about one mission, or a set of missions a month. So about one a month.

Missile warning kicks in, I think, a little bit later this fall. And so, they will finish that out through the beginning of next year. Once those are in orbit, the plan is actually pretty nice. So they are the Low-Earth-Orbit missile warning architecture. There is another office doing the Medium-Earth-Orbit architecture, and then there are other offices existing in the future that are doing architecture out in Geostationary-Earth-Orbit. All that data is flowing into the same system. There are multiple pathways for all the Overhead Persistent Infrared systems, and the Low-Earth-Orbit data from Space Development Agency is flowing into those same exact systems.

Mr. WHITESIDES. Okay. Thank you for that.

Mr. Chairman, I yield back.

Dr. DESJARLAIS. I thank the gentleman.

The chair now recognizes the gentleman from Colorado, Mr. Crank, for 5 minutes.

Mr. CRANK. Thank you, Mr. Chairman.

I appreciate our witnesses being here. Thank you all for your service to our country.

If you have heard me speak for any length of time at this subcommittee before, you know I am already excited about the potential for Golden Dome to protect the homeland and deter our adversaries. And, while I am sure we are going to spend several years here on this committee debating which fancy and expensive systems to buy, Congress and Department of Defense need to ensure that we are doing it in a smart way. Just like how you need to buy a propane tank to go with your gas grill, we need to ensure we aren't just funding systems but also the support infrastructure needed for success.

General Purdy, I want to focus on two exciting programs essential to homeland defense: orbital warfare spacecraft and space-based interceptors. Can you tell me how, in addition to procuring these critical weapon systems, the Space Force is also thinking

about all the other things that are needed to successfully field and employ these items? I am thinking of the personnel, the training, the testing capabilities, and especially the command and control and control architectures.

The Satellite Control Network is rapidly aging, and already near max capacity for day-to-day operations; and the new phased array systems are still in development. How is the deployment of these new phased array systems going, and how are you continuing to add requirements for additional capacity in the Satellite Control Network as the systems that will use it continue to proliferate? General Purdy.

General PURDY. Sir, thank you for the question. That is a particular strong focus of basically what we would call end-to-end capability. Too long in the past, we would deliver one—say, a satellite or whatnot, and we would not be considering this whole—the whole rest of the architecture. So we have kind of established a policy of fully mission capable, fully end to end. So there are multiple ways that we are getting after that activity.

So for one, we actually have a Program Executive Officer stood up to get after test and training architecture; so I will set that one side. I have a whole integration team that reports to me as the Service Acquisition Executive. Their job is to get after the end-to-end integration pieces, and specifically, to be tracking all the programs and making sure that we have the capacity that we are building and for tests and training architecture, Satellite Control Network architecture, et cetera. So I have got that process going.

Specifically on Satellite Control Network—because you mentioned that one a few times—we have our existing Satellite Control Network architecture, as you mentioned. The next generation is the Sensor Complement and Radar Active Electronically Scanned Array radar system that we are developing that allows to hit multiple contacts at the same time. That is going reasonably well. It is a complicated build. And so, it is, frankly, too slow for my taste and too slow for the need, but it is going reasonably well. And so they are aiming for the next—for the first system, there is a demo this year, and then there is a—I think it is the next year or year-plus is when that first one is coming out.

As a back-up plan, what we have got going on is what is called JAM, the Joint Antenna Marketplace. This one is pretty exciting because this is going to do two things for us: It is going after full ops commercial. There is a lot of commercial capacity out there to do Satellite Control Network activity. We have practiced that with Space Development Agency. We have practiced that with Space Rapid Capabilities Office. Both of them have used commercial, cloud-based Satellite Control Network and actually even worldwide as well. And so Joint Antenna Marketplace is going to get after—that is going to open up hundreds of additional capacity and ability to go get hundreds of additional targets.

In addition, that is going to do what is called orchestration to help us figure out, machine to machine, which systems we are going to go. Are we going to use existing Satellite Control Network? Are we going to use Sensor Complement and Radar? Are we going to use this Joint Antenna Marketplace? So all of those elements are pieces of the architecture that we are putting together slowly, and

I am tying it together and tracking it at my level with our integration function. Think of it as, like, a space systems chief engineer.

Mr. CRANK. Okay. You talked about—and I don't have enough time here, but I am going to throw this out there and maybe if we get a second round we will come back to it—but you talked about the Unified Data Library, of course, a cloud-based data repository designed to consolidate commercial and United States Government space situational awareness data. It is intended to be the single source for accessing and managing all data in support of Space Force operational systems.

To what extent is Space Force using it, and which Space Force operational systems are connected to it?

General PURDY. Yeah. Many, if not all. So multiple Deltas at Space Operation Center are using it for their positional tracking in addition to, say, interference kind of activity. The National Space Defense Center, which is the ops floor doing the space floor, is tracking it with their C2 system. United States Space Command at the combatant commander uses it for their official common operating picture. Joint Commercial Operations, the main ops hub that is plugging in all the combatant commanders, is also using it and tracking it, and we actually track that worldwide in worldwide ops centers.

Mr. CRANK. Great. Thank you.

Mr. Chairman, thank you.

Dr. DESJARLAIS. Yes. Thank you.

The chair now recognizes the gentleman from Missouri, Mr. Bell, for 5 minutes.

Mr. BELL. Thank you, Mr. Chair, Ranking Member.

Dr. Scolese, I want to echo the sentiments of my colleagues and thank you for your service, as well as Admiral Whitworth, General Purdy, and also Ms. Yaffe. Your depth of knowledge and space policy and strategy is impressive and appreciated and very much needed at this time.

I am proud to represent St. Louis, home to the National Geospatial-Intelligence Agency's West Campus, or NGA St. Louis, a cornerstone of our Nation's defense and a testament to St. Louis' growing sector and leadership in geospatial intelligence. St. Louis is rapidly solidifying its position as America's center for geospatial intelligence and hub of innovation.

With the soon-to-be-open, brand-new, state-of-the-art National Geospatial-Intelligence Agency West, or National Geospatial-Intelligence Agency St. Louis facility, my district is not only supporting the mission of National Geospatial-Intelligence Agency, but it is becoming indispensable to it. This investment reinforces the agency's capabilities and anchors St. Louis as a crucial component for our country's national security.

National Geospatial-Intelligence Agency's presence in St. Louis isn't just a point of pride. It is a clear recognition of our region's critical contributions to intelligence, innovation, and homeland defense and security. St. Louis is not just participating in our national security efforts, we are helping lead them.

With that, Admiral Whitworth, and Ms. Yaffe, I would like you to chime in as well, if you don't mind. Can you provide an update on the progress and status of the new facility and your vision for

the local academic and community partnerships that might be fostered and developed through this new opportunity?

Admiral WHITWORTH. Thank you, Mr. Bell. It is good to see you again. You got to see the real National Geospatial-Intelligence Agency when you participated in our 845 ops and intel update. That wasn't a stunt. That was the real National Geospatial-Intelligence Agency.

And so this is a very, very important question. We are very pleased to report that we are on glide slope for an opening on the 26th of September. We are in the fine-tuning right now of that facility on the northern portion of St. Louis. That involves mainly just Information Technology. And we know where everyone is going to sit. We have been giving tours to our workforce. They are getting excited. It is ready to go.

On your question vis-a-vis the ecosystem, also extremely important. That is vibrant right now and one of the best examples of the combination of business, academia, civil government, Federal Government, and intelligence all banding together to ensure that this is a success. I think it will be a polestar for other communities as far as the relationship, especially between local business, local government, Federal Government, and academia with something like the Taylor Geospatial Institute, which is at full tilt.

Ms. YAFFE. Thank you. I am not sure if I can add much to the National Geospatial-Intelligence Agency facility, but, I mean, I would just say we have to continue to foster the space expertise and ecosystem within the government and with the industrial base because the sector is only growing and we are going to need to leverage all the talent out there. Thank you.

Mr. BELL. Thank you. A few weeks ago, General Guillot testified before this committee that National Geospatial-Intelligence Agency is an extremely important partner in United States Northern Command and North American Aerospace Defense Command day-to-day operations and that every advanced mission we do includes National Geospatial-Intelligence Agency capabilities.

As the Nation develops the Golden Dome for America and as adversaries continue to modernize and enhance their capabilities, what is National Geospatial-Intelligence Agency's role in this mission of defending the homeland against missile threats, and how do you see geospatial intelligence contributing to Golden Dome efforts?

Admiral WHITWORTH. Thank you very much for this question. It is a multidimensional answer. I will give it very quickly.

I would offer that our advancements in target development—the target development section of Artificial Intelligence-enabled mission command. Some of the things that we have been able to foster through National Geospatial-Intelligence Agency Maven/Maven Smart System, I think, may be applicable here. And then, of course, we have expertise and a really important bridging between Title 10 and Title 50 on some of the sensors that detect heat.

Mr. BELL. And then, quickly, in your statement for the record, you mentioned that National Geospatial-Intelligence Agency leads a community-wide process to coordinate commercial geospatial intelligence purchases across the government, maximizing the ability to share commercial imagery and analytics and preventing redundant acquisitions.

Admiral, how does National Geospatial-Intelligence Agency work with consumers of commercial imagery and analytics, including the combatant commands, as well as National Reconnaissance Office and Space Force?

Admiral WHITWORTH. Yes, sir.

Mr. BELL. In 3 seconds.

Dr. DESJARLAIS. If you would, just submit that for the record. We are going to be running up against votes. We have got one more round of questions, and then we are going to move to the classified—

[The information referred to can be found in the Appendix on page 79.]

Mr. BELL. Thanks, Mr. Chairman.

Dr. DESJARLAIS. —session so that we can get you out of here before we go vote.

So the chair now recognizes Mr. Hamadeh from Arizona for 5 minutes.

Mr. HAMADEH. Thank you, Mr. Chair.

Space is the next frontier of warfare, and it is easy to overlook because we can't see it. But, back home in Arizona in Flagstaff, there is a small naval observatory that plays a huge role. That little station helps tell us exactly where we are in the galaxy. It aids in setting the official time for the entire Department of Defense and the country.

Global Positioning System, internet communications, every part of our daily life depends on commercial and military space assets. Our enemies know this, and that is why China and Russia say that our satellites are fair game. They are preparing to knock us back decades without ever hitting American soil or our servicemembers. Now, that is why this mission of our Space Force is so crucial. We have no choice but to build America's technical edge, resilience, deterrence, and counter-strike abilities in this space domain.

Now, my first question is for Ms. Yaffe. I am going to piggyback off what Congressman Wilson was talking about with Russia's latest Space Race and what we talked about last time in the bigger committee last week.

What equivalent wild card option do we have that keeps the Russians and Chinese up at night in terms of offensive capabilities? I know we focus a lot on defensive.

Ms. YAFFE. Thank you, sir, for the question. I mean, certainly, we are not looking for an equivalent capability to what Russia might be pursuing. It would be a violation of the Outer Space Treaty and would be devastating to Low Earth Orbit and to our interests.

With that said, we are trying to be absolutely clear to Russia and China and anyone else that wishes to do us harm that we have an imperative to protect our freedom of access to space and our freedom to operate in space, and we are going to need a breadth of capabilities to do that.

You know, we are trying to normalize space as an operational domain, which normally means we largely focus on doing things more normally within the Department, having war games that consider space, ensure military plans do, et cetera, but there are some differences with the space domain. So we may not talk about our ca-

pabilities in the same way. We think there are other ways to message to our adversaries what we intend to achieve, but we want to be absolutely critical we are going to protect and defend our critical space-based assets and our joint force from space-enabled threats with the breadth of capabilities and to ensure the President and Secretary of Defense have options.

Mr. HAMADEH. Very good. And I know you mentioned earlier in your testimony about burden-sharing with our allies as well. How do our allies see this Space Race? Do they see the same threat as we do?

Ms. YAFFE. Thank you, sir. We think that cooperation with allies and partners remains essential, and certainly space offers advantages for burden-sharing. We have a few ways to go about it. Part of it is ensuring that we do see the threat in the same way.

We have been pursuing for a number of years something that is called the Combined Space Operations Initiative, or CSPO. It has grown recently from seven to 10 countries of our most capable space-faring partners. Part of that is ensuring that we see the threats in the same way. Part of it is thinking about how we approach the domain to operate most effectively and to our advantage. We explore different operational concepts and we explore appropriate behaviors because, unlike in every other domain, we don't have norms of behavior.

We also engage bilaterally with some of our most capable space-faring partners because we do believe there are different ways that they can take up the burden to ensure that we can all approach the domain and protect our freedom to access and operate in the domain.

Mr. HAMADEH. Are we looking at expanding it beyond the 10 partners already?

Ms. YAFFE. It is certainly under consideration. It is not calendar-based. It is conditions-based. We want to expand when there are partners that can bring something to the table, and that is what we did most recently with Japan, Italy, and Norway. If we assess that there are other partners that can similarly contribute to both the threat picture and operational concepts and capabilities and norms, I think that there would be consideration among those 10 partners to expand.

Mr. HAMADEH. Very good. Thank you, Ms. Yaffe.

Ms. YAFFE. Thank you.

Mr. HAMADEH. My next question is to General Purdy. Seems like there has been a lot of progress with the acquisition reform, especially with the 6 months NRO contract that you were mentioning earlier.

I know acquisition reform is going to be a huge focus of this year's defense bill, and we can't keep pace with China if we don't have the space industrial base.

But if you had the power to make a single change to our space acquisitions, what would that be?

General PURDY. So there are a host of—in the Planning, Programming, Budgeting, and Execution Commission, in other commissions that have listed out a whole host of activities, if I had to pick one, I think flexibility of funds, particularly in Continuing Resolution environments. We really find ourselves up in a barrel

when we can't actually get our funds, you know, until later in the year.

And so ability to do Below-threshold reprogramming above-threshold reprogramming thresholds at a higher level, ability to do quick starts, ability to get moving in that progress while we are waiting for the big bill, I think is probably one of the most number one things I would poke at.

Mr. HAMADEH. Flexibility seems to be a unifying issue.

General PURDY. Yes.

Mr. HAMADEH. Thank you. I yield back, Mr. Chairman.

Dr. DESJARLAIS. Thank you. That concludes the open portion of the hearing. We will now move to the closed setting.

[Whereupon, at 4:31 p.m., the subcommittee proceeded in closed session.]

A P P E N D I X

MAY 14, 2025

PREPARED STATEMENTS SUBMITTED FOR THE RECORD

MAY 14, 2025

**Chairman DesJarlais Opening Remarks
National Security Space Programs Hearing
May 14, 2025**

Today's hearing will come to order.

Pursuant to Committee Rule 4(b)(3), members of the House Armed Services Committee who are not members of the subcommittee are allowed to participate in today's hearing and will be recognized after all subcommittee Members have had an opportunity to ask questions.

The Strategic Forces subcommittee meets today to receive testimony on the policies and programs related to national security space activities.

Good afternoon to our witnesses and thank you for joining us today. Before us we have:

- Ms. Andrea Yaffe, the Acting Assistant Secretary of Defense for Space Policy within the Office of the Secretary of Defense
- Dr. Chris Scolese, the Director of the National Reconnaissance Office
- Vice Admiral Frank Whitworth, the Director of the National Geospatial-Intelligence Agency
- Major General Stephen Purdy, the Acting Assistant Secretary of the Air Force for Space Acquisition and Integration

We appreciate your time today and your service. Unfortunately, we still do not have the programmatic details for the President's budget request for fiscal year 2026 but the topline number did give some hints.

The space systems and people provided by the organizations you all represent are foundational to the security of our nation and the joint force. This is why it is so important that we have to ability to fight and win in space.

It's not enough to simply provide important information like missile warning, PNT, and nuclear command and control in all stages of conflict. Now we must be able to hold at risk the CCP kill web that enables space-based targeting and tracking of our terrestrial forces and extends the range and accuracy of their weapons.

Our ability to break this kill web will determine the success or failure of the joint force and its objectives in the INDOPACIFIC. That requires having the right systems in a relevant timeline.

I want to associate myself with Chairman Rogers and Ranking Member Smith who have been calling attention to not only how we buy things and the broken acquisition processes, but also the people doing the acquiring.

Specifically, regarding the Space Force, they have raised concerns with how those acquisition professionals are developed, trained, and given opportunities to advance in their careers.

As we work to make sure we are developing a force that can fight and win in space, we must also make sure that the platforms they will need to break those kill webs are delivered on time and on budget. That starts with having highly trained acquisition professionals.

Every Guardian supports the warfighting mission. This means that time spent at Space Systems Command figuring out how to bring more nontraditional companies into the mix is just as important as time spent at Delta 9 conducting orbital warfare.

This subcommittee is proudly where the Space Force got its start. We will – in a bipartisan way – continue to push to make sure that it stays the course and achieves that original vision of improving space acquisitions.

I look forward to hearing updates today from our witnesses on some of your programs and how you are working to speed up that acquisition timeline so that we can deliver needed systems to the force.

Major General Purdy, I'm glad to see that you aren't standing still, despite serving in an acting capacity. Your recent announcement of a new acquisition plan for a follow-on to the Geosynchronous Space Situational Awareness Program or GSSAP¹ that calls for more commercially developed technology and diversifies the supplier base is just the type of innovation we need.

Dr. Scolese, the NRO's rapid deployment of its proliferated constellation of more than 150 satellites over the past two years has not only given you the largest government constellation but has been a great example of how we can move quickly.

Vice Admiral Whitworth, the recent awarding of task orders for commercial imagery analysis on your Luno A program, and the funding of the Luno B program focused on commercial AI are exactly the kind of commercial integration we need to stay ahead of our adversaries.

Finally, Ms. Yaffe all these efforts are underpinned by our policies in space. How your office is planning for the increased testing, training, and changing operational norms to support these new systems and warfighting doctrine will be incredibly important.

With that I now recognize the Ranking Member, Mr. Moulton, for his opening remarks.

¹ Pronounced "G-SAP"

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Written Statement of Ms. Andrea Yaffe
Acting Principal Deputy Assistant Secretary of Defense for Space Policy before the
House Armed Services Committee Subcommittee on Strategic Forces
on Fiscal Year 2026 Budget Request for National Security Space Programs
May 14, 2025

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Introduction

Chairman DesJarlais, Ranking Member Moulton, and distinguished members of the Committee: Thank you for inviting me to testify before you on the Department of Defense's Fiscal Year (FY) 2026 Budget Request for National Security Space Programs. I am honored to appear alongside my colleagues from the Department of the Air Force and the Intelligence Community.

Space and space programs remain central to the Department's core mission of deterring conflict and ensuring our national security. The President, the Secretary, and, indeed, the entire Joint Force rely on the capabilities provided by our space architecture. Space systems and spectrum enable our nuclear forces; our nuclear command, control, and communications (NC3); strategic warning; missile defense; communications; global force projection; and intelligence, surveillance, and reconnaissance (ISR). Space will also be essential to the Golden Dome for America (GD4A) architecture. Taken together, our space capabilities are integral to the Interim National Defense Strategic Guidance's priorities of defending the homeland and deterring China, and present unique opportunities to increase burden sharing with our allies and partners.

China and Russia, meanwhile, are rapidly fielding space and counterspace systems designed to neutralize our space-enabled military advantages and hold the Joint Force at risk. These developments pose an increasing and unacceptable threat to the United States and our allies and partners, including the commercial space sector. Our ongoing investments seek to ensure the Department can establish space superiority, assure critical space-enabled missions, retain capabilities to deny adversary hostile uses of space, and ensure the Joint Force continues to have access to – and freedom to operate in – space.

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FY 2026 Space Budget Request

The Department is finalizing the FY 2026 budget request, which I anticipate will include a range of space-related investments aligned with the Administration's priorities. The Department's continued development and fielding of more resilient architectures will directly support robust missile warning and missile tracking capability that provides timely warning of threats to the homeland and our forward-deployed forces. Satellite communications and data transport investments across multiple orbital regimes will enable command and control across the globe, from mission critical NC3 to tactical communications. The Department is continuing to invest in space control capabilities to counter hostile uses of space and protect and defend U.S. and, as directed, allied, partner, and commercial space capabilities that support our critical missions. We continue to invest in space domain awareness systems to provide space operators with timely information and prevent operational surprise. Underlying this all, National Security Space Launch provides assured access to space so we can put these important capabilities into orbit.

Security Environment

The scale and scope of the challenges presented by the increasing number of space and space-enabled threats pose a substantial and growing risk to the American people, U.S. national interests, and our allies and partners. Moreover, the growing cooperation and potential for increasing coordinated action among China, Russia, the Democratic People's Republic of Korea (DPRK), and Iran is a clear indicator that they share a common interest in undermining U.S. interests and alliances globally.

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China continues to develop counterspace capabilities to contest or deny other nations' access to and operations in the space domain. These include direct-ascent anti-satellite missiles, co-orbital satellites, electromagnetic warfare, and directed-energy systems. China seeks to enhance the People's Liberation Army's space-enabled capabilities – including systems enabling the ability to track, target, and strike our Joint Force – and is increasing the number of space systems it has on orbit. More broadly, China's space enterprise continues to mature rapidly, and China has devoted significant resources to growing all aspects of its space program, from military space applications to civil and commercial applications.

Like China, Russia seeks to exploit what it perceives as U.S. reliance on space for military operations and is investing in a similar range of offensive counterspace capabilities. Russia has also conducted cyber intrusions against commercial satellite communication networks and Russia has repeatedly threatened commercial satellites providing space-based services to Russia's adversaries, calling them potential targets. The Department also remains concerned that Russia is developing a new satellite meant to carry a nuclear weapon as an anti-satellite capability. Placing a nuclear weapon, or other weapon of mass destruction, in orbit around the Earth, installing such a weapon on celestial bodies, or stationing such a weapon in outer space in any other manner would violate the Outer Space Treaty and would be inherently destabilizing because of the potential for miscalculation, the risk of technical mishap, and the potential for Russia's loss of command and control. Placing a nuclear weapon on orbit is not merely a threat against any one nation, but a threat against all nations. A detonation of such a weapon would likewise be an attack on the United States and harm all nations because it would damage or destroy space systems that all nations depend upon, including systems providing vital

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communications, scientific, meteorological, agricultural, commercial, public safety, and national security services.

The DPRK and Iran also continue to develop their nascent space programs. The DPRK has conducted several reconnaissance satellite launch attempts in recent years in violation of multiple UN Security Council resolutions related to the DPRK's use of ballistic missile technology. Iran's development of space launch vehicles, such as the Simorgh, would shorten the timeline to produce an intercontinental ballistic missile, if Iran decided to develop one, because the systems use similar technologies. Both the DPRK and Iran also maintain non-kinetic counterspace capabilities, including systems for jamming communications and GPS signals. We are also aware of Russia's intention to share advanced space and satellite technology with the DPRK, which would likely speed up the development and fielding of DPRK's space capabilities. Similarly, Iran has used Russian launch services to place communications and navigation satellites into orbit.

Foundations of Strategic Approach in Space

The United States seeks a secure, stable, and accessible space domain to allow for its continued use for commercial, scientific, and national security activities. China and Russia recognize the United States's reliance on space and are both developing and fielding counterspace capabilities designed to deny our freedom of action in space and target U.S. forces on Earth. Space superiority is thus integral to achieving peace through strength in the face of these threats – principally through deterrence and defense in peacetime, but also by enabling the Joint Force to prevail in all stages of conflict if deterrence fails. Specifically, space superiority

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underlies our ability to defend the homeland and to deter China by denying their ability to confidently hold the Joint Force at risk.

To achieve space superiority, we are executing on the Secretary's guidance to pursue a robust, combat credible force and accompanying operational plans for space, just as the Department does in all domains. We are leveraging our competitive advantages, including our commercial space sector and allies and partners, who are increasing investments in space security and are looking to work with the United States to strengthen deterrence and defense. The Department is pressing on several lines of effort in our space policy that enhance our ability to defend the homeland, deter China, and increase burden-sharing.

Mission Assurance

The Department's investments reflect the strategic imperative to assure the ability to accomplish critical national security missions. In support of these imperatives, our space architecture must be engineered to fight through multiple attack vectors ranging from cyberspace network attack to direct kinetic engagement. Our space capabilities must also account for adversaries' differing approaches to the hostile use of space.

Through a combination of resilient architectures, supported by defensive capabilities and reconstitution, we are investing and posturing to deny adversaries the benefits of an attack in space. The U.S. Space Force's (USSF) Space Development Agency's Proliferated Warfighter Space Architecture has been one prominent example of the commitment to mission assurance through resilience through proliferation. The USSF has leveraged spiral development to deploy a resilient constellation of small satellites that supports important missions and enhances our

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strategic posture in areas like missile warning, missile tracking, missile defense, and data transport. These proliferated architectures will also be central to enabling GD4A.

Our relationships with industry and allies and partners worldwide are also important sources of resilience across space mission areas. With access to more commercial data and contributions from allies and partners, we diversify – and thus make more resilient – the elements of our space architecture.

Space Control

However, resilience alone does not mitigate every threat. An adversary's uncontested use of space in a conflict could be used to deny the freedom of operation to all joint military operations on Earth and in space. Commensurate with this risk, the Department is implementing a balanced space deterrence force structure that includes capabilities for offensive and defensive space control missions. This approach ensures the President and Secretary have options to deliver effects that contribute to our ability to defend the homeland and deter China. Current investments related to space control include integrated space fires and protection capabilities, modernized and agile electronic warfare architecture, enhanced battlespace awareness and space systems defense, and a range of other capabilities.

Joint Force space operations could use a variety of reversible and irreversible means to deny both an adversary's counterspace capabilities and its hostile use of space. Such operations could originate in any domain and target on-orbit, ground, cyber, or link segments to reduce the scope and scale of an adversary's ability to exploit the space domain in support of aggression, whether in space or on Earth.

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In providing options to national leadership, we will balance the development, testing, and employment of these capabilities with our need to maintain a space environment that is stable, secure, safe, and sustainable for continued operations. To that end, the Department is also making progress on complementary process improvements to normalize space as an operational domain. These updates are enabling more efficient review and approval of sensitive activities, including aggressively tackling overclassification, continuing reform of special access programs, and regular incorporation of space capabilities into the operational planning, training, and exercise processes.

Norms of Behavior in Space

Our national security space programs are supported by the Department's ongoing efforts to shape the strategic environment and set conditions for operational success. As part of this effort, norms help to set a baseline for behavior in space from which it becomes easier to discern anomalous behavior. At a time when both China and Russia have weaponized space by deploying and testing increasing numbers and novel types of orbital weapons, and after Russia generated large amounts of orbital debris that threatens the space environment through a destructive, direct-ascent anti-satellite missile test, this baseline understanding is of utmost importance.

In coming years, thousands more satellites are set to join the thousands already on orbit. Without strong and active efforts to maintain the U.S. advantage, our adversaries will exploit the opportunity to create rules of the road for this increasingly congested domain and propose unworkable and disingenuous treaties or standards that constrain our freedom of action.

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Commercial

The innovative capabilities, scalable production capacity, and rapid technology refresh rates of the U.S. commercial space sector are competitive advantages the Department is also leveraging to enhance our national security space programs. The Department released its first Commercial Space Integration Strategy last year, outlining how we will integrate commercial space solutions, including ensuring access across the spectrum of conflict and establishing necessary security conditions. The strategy also states clearly that we will integrate commercial space solutions to enhance resilience and add capability without imposing unacceptable risk for all of the national security space mission areas.

There is tremendous potential to build on the success of commercial providers to increase the lethality of the Joint Force and enhance our ability to defend the homeland and deter China. There are opportunities to be found in each mission area, including command and control; cyberspace operations; electromagnetic warfare; environmental monitoring; intelligence, surveillance, and reconnaissance; missile warning; nuclear detonation detection; positioning, navigation, and timing; space access, mobility, and logistics; satellite communications; space domain awareness; and spacecraft operations.

True integration will require a cultural shift within the Department. To that end, the Department will prioritize eliminating the structural, procedural, and cultural barriers to overcoming legacy practices and preconceived notions of how the commercial sector can support national security. Our uniformed colleagues are already taking action. For example, U.S. Space Command (USSPACECOM) is co-sponsoring an effort with SpaceWERX on sustained space maneuver. The Command will identify 10 proposals for \$1.9 million each in funding. This

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effort will invest in promising technology from the commercial industry to help solve the sustained space maneuver challenge and support bringing a joint function to the space domain.

Allies and Partners

Space is a domain that supports missions across all domains. Combined with our efforts to integrate commercial space sector innovations within our national security space architecture, expanded cooperation with allies and partners is integral to our national security space programs. Allies and partners help ensure the Department is effectively postured and positioned around the globe to address the growing magnitude and vectors of threats in, from, and to space. The aspiration of other countries to invest in space security has given rise to new opportunities to cooperate across the spectrum of conflict, share the burden of defense, and strengthen deterrence. This burden sharing is a Department priority in and of itself, but our space cooperation with allies and partners contributes to our other strategic goals of defending the homeland and deterring China.

Nowhere is this more evident than the Combined Space Operations (CSpO) initiative, a multinational partnership to prevent conflict in space. Since its inception in 2014 with four members, the CSpO initiative has grown to ten nations including Australia, Canada, France, Germany, Italy, Japan, New Zealand, Norway, the United Kingdom, and the United States. Together, we have improved cooperation to extend options for diplomatic and military responses in crisis situations, including by broadening the number of systems available for space operations, principally through USSPACECOM's Multi-National Force Operation OLYMPIC DEFENDER (MNF-OOD). The countries in CSpO and MNF-OOD include our most capable space-faring allies who are significantly increasing their spending on space security and defense.

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They also represent different parts of the world. This geographic and political diversity lends itself to the global terrestrial footprint that space operations require and supports our efforts to shape the strategic environment in both the norms and messaging arenas.

But the Department's efforts to integrate with our allies and partners to be combat multipliers are not limited to CSpO and MNF-OOD. The USSF increasingly augments U.S. warfighting systems with allied contributions. This includes expanding essential wideband global communications services that enable combatant commanders to exercise command and control of their tactical forces, leveraging allied systems such as Norway's Arctic Satellite Broadband Mission and Japan's Quasi-Zenith Satellite System to place U.S. military payloads in space, and fielding the Deep Space Advanced Radar Capability with Australia and the U.K. to protect critical U.S. and allied satellite services. In this resource constrained environment, the USSF is attempting to drive this model of cooperation harder with a strategy of Allied by Design that aims to field a military space architecture that includes allies and partners from inception, not merely as an afterthought. By including allies and partners early in our force design processes, we can coalesce our requirements and increasingly share the resource burden to field warfighting systems with our closest allies and partners. In many cases, these partnerships unlock opportunities otherwise unavailable to us by virtue of unique geography or represent significant cost savings for the United States compared to investing in our own standalone capabilities.

We have also made important progress reducing outdated space classification barriers that have hindered collaboration across the Department, with allies and partners, and with the commercial space sector. Among other changes that have unlocked opportunities for closer cooperation, the Department's new classification policy for space capabilities permits conceptual

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discussions on space control capabilities that were previously restricted. In several instances, we have been able to share insights from our experiences and support allies in making informed investment decisions for protecting and defending their sovereign systems that support coalition operations. Even this seemingly minor change has removed a major obstacle and unlocked new avenues of collaborative discussion with key allies, including opportunities for allies to assume more of the burden of defense by contributing their capabilities or capacity.

Conclusion

The Department remains committed to making the necessary investments in our space programs to deter our adversaries and, if deterrence fails, prevail in conflict. This mission requires sufficient and consistent funding and support. Thank you for your dedication to our mission and our servicemembers, and for the opportunity to testify to you today alongside my distinguished colleagues. I look forward to answering your questions.

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Andrea Yaffe - Acting Principal Deputy Assistant Secretary of Defense for Space Policy



Andrea Yaffe is responsible for supporting the ASD for Space Policy on all matters under the ASD's purview, to include nuclear deterrence, countering weapons of mass destruction, space, and missile defense policies.

Ms. Yaffe came to that capacity after servicing as the National Security Council's Director for Space Policy. In that role she served as the lead advisor to the National Security Advisor on all matters related to outer space policy. She took on that challenge after serving as the Director for Space Strategy and Plans in OUSDP. As Director for Space Strategy and Plans, she led a team that developed and shaped Department of Defense space policies and strategies and contributed to broader U.S. Government space strategies.

Prior to that role, she served for five years as the Director of Transnational Threats in OUSDP's Countering Weapons of Mass Destruction (CWMD) office. Her team served as the OUSDP lead for WMD interdiction, multinational arms control, denying Iran a nuclear weapons capability, and mitigating North Korea-related WMD threats.

She began her tenure working CWMD issues as a Foreign Policy Advisor on the DoD Cooperative Threat Reduction (CTR) policy team. She joined the CTR team after serving as Deputy Director of the OUSDP Pakistan team, working mostly on nuclear issues during two of the bilateral relationship's most challenging years.

Before joining DoD, Andrea was an Associate Vice President at The Cohen Group, helping to build the firm's India practice, while also working on Middle East and homeland security issues for clients. She started her career as a legislative correspondent for Senator Carl Levin.

Andrea has a BA in International Relations from Johns Hopkins University and an MA in Security Policy Studies from George Washington University.

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Statement for the Record of Dr. Christopher J. Scolese
Director, National Reconnaissance Office

House Armed Services Committee, Subcommittee on Strategic Forces
Hearing on "Fiscal Year 2026 National Security Space Programs"

Wednesday, May 14, 2025

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Introduction:

- Chairman DesJarlais, Ranking Member Moulton, and members of the subcommittee... I'm honored to join you today along with my colleagues, Acting Principal Deputy Assistant Secretary Yaffe, Maj. Gen. Purdy, and Vice Admiral Whitworth... and to represent the people of the National Reconnaissance Office.
- For 64 years, the NRO has been at the leading edge of innovation, developing space-based capabilities that advance our national security. Today, the NRO is building on that legacy, and moving faster than ever before thanks to the technical expertise and talent of our small and highly effective workforce.
- Today we are accelerating the build-out, launch, and operations of the world's most capable, resilient, and technologically advanced satellite constellation. We are strengthening the capabilities and security of our ground architecture. And we are deepening our partnerships across government, private industry, academia, and our allies.
- Our mission is clear – to achieve the President's objective of "peace through strength."
- This is especially critical as our competitors are seeking to deny our strategic advantage in space. With Congress' continued support, we will ensure America remains the world's leader in space-based intelligence, surveillance, and reconnaissance.

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NRO capabilities:

- Over the past two years, the NRO has dramatically transformed our space operations, launching more than 200 satellites to create the largest and most capable government constellation in our nation's history, providing data to our partners sitting with me here today, as well as to NSA and others.
- This constellation adds capability and resilience through shorter revisit times, increased observational persistence, and faster processing and transmission of data.
- With the support of Congress, the NRO will continue to invest in capabilities that are helping to solve some of the toughest intelligence challenges of our time:
 - Employing advanced technologies makes it harder for our adversaries to hide, giving the U.S. decision advantage.
 - Using different orbits and proliferating our systems allow us to track more objects more reliably.
 - Diversifying systems in space and on the ground increases resilience.
 - Employing AI techniques in advanced data systems allows us to provide more information faster to users – especially

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intelligence analysts and policymakers to warfighters down-range, allowing them to make critical decisions with the best information.

- Developing leading-edge research in photonics, quantum sensing, advanced materials, and AI/ML prepare us for the future.
- All of these advanced capabilities as well as those in development allow us to rapidly support current challenges like the crisis in Ukraine and narcotics trafficking... to future demands in the Pacific and implementation of the Golden Dome.

Partnerships:

- The NRO's talented workforce is delivering unparalleled capabilities – on orbit, on the ground, and everywhere in between. But we can't do it alone.
- We are continuing to build partnerships across government, academia, industry, and with allied nations that enable us to leverage innovative technologies and maximize our impact:
 - Working with our intelligence community partners, our world-class constellation and ground architecture will fuse data across collection platforms to provide automated tipping and cueing to enable analysts' and warfighters' success. For example, working with DIA, we accredited tools and capabilities to enable data fusion, improving intelligence outcomes.

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- We have a close and productive relationship with NASA and the U.S. Space Force to support coordinated investment in space science and technology.
- Through an increasing number of commercial partnerships, we're leveraging commercial satellite buses, launch services, and data – from electro-optical to radar and RF, as well as other phenomenologies. We're fusing commercial data streams with national data streams, making them more readily available to our customers.
- Our enduring partnership with the U.S. Space Force exemplifies the power of interagency collaboration, enabling us to reliably access space for NRO systems. The Space Force has been an exceptional partner, particularly in its work incorporating NRO-specific requirements into Phase 3 of the National Security Space Launch Program through both Lane 1 and Lane 2 options. Just last month we launched the first mission under the NSSL Phase 3 Lane 1 launch service. It went from award to launch in just six months, an unprecedented speed – fast-tracking capability to the warfighter. This successful model of partnership sets the foundation for broader engagement with other agencies and allies.

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Closing:

- The NRO's continued success in maintaining our competitive advantage and keeping America safe depends on our ability to innovate, our investments in our workforce and our partnerships, and on Congress' continued support for our mission.
- We are committed to delivering on our mission effectively and efficiently, achieving acquisition efficiencies by leveraging both our Title 10 and Title 50 authorities. Our responsible stewardship of taxpayer dollars is best illustrated by our 16th consecutive clean financial statement audit for Fiscal Year 2024.
- Members of the Committee, the NRO is well positioned to provide the intelligence collection from denied areas that is required for our national defense. From the vantage point of space, we collect and deliver information critical to meeting our nation's highest priority – protecting safety and security at home and abroad.
- On behalf of the entire NRO workforce, I appreciate the opportunity to appear before you today. Thank you for your time, and I look forward to answering your questions.

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DR. CHRIS SCOLESE

NRO LEADERSHIP > **DR. CHRIS SCOLESE**



DR. CHRIS SCOLESE

DIRECTOR OF THE NRO (DNRO)

Dr. Christopher J. Scolese was sworn-in as Director, National Reconnaissance Office (NRO) on 5 August 2019. He is the 19th Director, and the first to be Presidentially Appointed and Senate Confirmed. Dr. Scolese provides direction, guidance, and supervision on matters pertaining to the NRO and executes other authorities specifically delegated by the Secretary of Defense and the Director of National Intelligence. Dr. Scolese began his government

NATIONAL RECONNAISSANCE OFFICE

In 1987, following a brief period of service working in government and industry, Dr. Scolese joined the National Aeronautics and Space Administration (NASA) where he was assigned to the Goddard Space Flight Center in Greenbelt, Maryland. During this period, he served in a variety of senior management positions including: Earth Observing System (EOS) Systems Manager, EOS Terra Project Manager, EOS Program Manager, and Deputy Director of Flight Programs and Projects for Earth Science. In 2001, Dr. Scolese was assigned to NASA Headquarters in Washington, D.C. where he served as the Deputy Associate Administrator in the Office of Space Science. In this position, he was responsible for the management, direction, and oversight of NASA's Space Science Flight Program, mission studies, technology development, and overall contract management of the Jet Propulsion Laboratory.

In 2004, he went on to become Deputy Director, Goddard Space Flight Center, where he assisted the Director in overseeing all activities, before returning to Washington, D.C. to become NASA's Chief Engineer in 2005. As Chief Engineer, he was responsible for ensuring all development and mission operations were planned and conducted on a sound engineering basis. In 2007, he was appointed the Associate Administrator, responsible for the oversight and integration of NASA's programmatic and technical efforts. From January-July 2009, Dr. Scolese served as NASA's Acting Administrator, responsible for leading the development, design, and implementation of the nation's civil space program.

In 2012, Dr. Scolese became the Director, Goddard Space Flight Center, where he led the nation's largest organization of scientists, engineers, and technologists responsible for building spacecraft, instruments, and new technology to study Earth, the sun, our solar system, and the universe. On 31 July 2019, he retired from NASA to become the Director, NRO.

Dr. Scolese holds a Bachelor of Sciences degree in Electrical and Computer Engineering from the State University of New York at Buffalo, New York; a Master's degree in Electrical and Computer Engineering from George Washington University, Washington, DC; and a Ph.D. in Systems Engineering from George Washington University, Washington, DC. Originally from Buffalo, New York, Dr. Scolese and his wife, Dianne, currently reside in Springfield, Virginia.

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Testimony of
VADM Frank D. Whitworth
Director
National Geospatial-Intelligence Agency
before the
House Armed Services Committee
Subcommittee on Strategic Forces
Hearing on
National Security Space Programs

Wednesday, May 14, 2025



NGA
NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY



EMBARGOED FOR PUBLIC RELEASE UNTIL HEARING DATE
Approved for public release, NGA-U-2025-01170.

Good afternoon, distinguished members of the subcommittee. Thank you for the opportunity to provide an update on NGA's mission and support to our national security space programs.

The National Geospatial-Intelligence Agency (NGA) is leading the world in delivering timely, relevant, accurate, and actionable geospatial intelligence (GEOINT). NGA provides the decision advantage to warfighters, policymakers, intelligence professionals, and first responders — advantage necessary to develop and carry out national security objectives that defend the homeland, secure U.S. interests abroad, and protect Americans serving in harm's way.

NGA's mission is the exploitation and analysis of imagery and geospatial information to describe, assess, and visually depict features and geographically referenced activities on and about the Earth. The GEOINT we deliver conveys what, when, and where events are happening and illustrates how they are occurring, their implications, and what is likely to transpire next.

NGA is an all-domain GEOINT agency, drawing imagery and the associated geolocational meta data, from the air, sea, land, and space. Space-based systems play a critical role in providing NGA the data we need to carry out our mission. Unfortunately, our global competitors also understand the importance of these assets, as well as the need to understand all activities occurring in the space realm. China's and Russia's space activities have become increasingly concerning, as each has developed and fielded counterspace capabilities, including progressively more capable multi-sensor systems designed to hold U.S. space-based systems at risk.

Both China and Russia have deployed ground-based counterspace capabilities, including electronic warfare systems, directed energy weapons, and antisatellite missiles. Russia's development of a satellite capable of carrying a nuclear weapon is particularly alarming, as its employment could cause devastating effects for U.S. and partner national and commercial satellites and architecture. The consequences of nuclear detonation in space would be severe for our global interconnected and interdependent infrastructure and would impact the lives of everyone on Earth.

NGA's motto — "Know the World, Show the Way...from Seabed to Space" — reflects the agency's responsibility to understand and distinguish developments such as these in a dynamic, changing world across every domain, including space. NGA is dual-hatted as a Combat Support Agency and member of the Intelligence Community; our role is unique and rooted in its formation by the direction of Congress to fulfill the GEOINT requirements of the Department of Defense, Department of State, and other federal agencies. NGA delivers on this commitment every day at every combatant command, and across the interagency.

Consistent with statutory requirements, NGA continuously provides warning, targeting, and safety across the globe. Anyone who fights wars, locates targets, sails a U.S. ship, flies a U.S. aircraft, makes national policy decisions, responds to natural disasters, or even navigates with a cell phone relies on NGA. Our collection experts task space-based systems — including U.S. national technical means (NTM) and commercial satellites — to produce imagery, enabling GEOINT exploitation across the National System for GEOINT (NSG) and the delivery of GEOINT for timely indications and warning of imminent threats in conflict areas and unique insights on critical issues around the world.

NGA's team, comprised of over 15,000 GEOINT professionals, is spread across more than 200 sites, including more than 20 countries around the world. You will find NGA personnel embedded at every combatant command, most warfighting headquarters, many government agencies, service intelligence centers, and at every intelligence agency. NGA officers are also co-located with the United States Space Force, United States Space Command, and National Reconnaissance Office.

In collaboration with these partners, we are driving a modernized approach to providing GEOINT to warfighters at the tactical edge. NGA has invested in several areas to achieve this objective through improved collaboration in the collection process, further refinement in commercial GEOINT acquisition, and a laser focus on the delivery of Artificial Intelligence and Machine Learning (AI/ML) technologies and capabilities to warfighters. NGA's investments in these areas and the efficiencies gained will be the focal point of my discussion today.

The expanding opportunities for space-based GEOINT collection, including NTM and commercial sources, are generating a data deluge that will allow us to support the demands and needs of warfighters in the future. NGA is meeting this challenge by enabling analysts to discover and integrate GEOINT data at the speed of mission, driving down the cost of data storage, and applying AI to quickly triage and exploit GEOINT data and distribute that information to users at the tactical edge, across all domains.

Obtaining the imagery and data necessary to answer intelligence questions is not a simple task. NGA's team of highly skilled professionals conduct a process we call "informed collection orchestration," choreographing an increasingly complex and capable constellation of space-based GEOINT assets.

Informed collection orchestration is the art of tasking pieces of the collection puzzle to align with national priorities, operational requirements and analytic needs, and real-world deadlines. NGA has incorporated AI-augmented GEOINT tasking which integrates AI-generated data streams and AI-assisted analytics to provide a more

efficient informed collection orchestration process. The process is central to ensuring our warfighters and intelligence professionals alike receive the imagery and analysis they need, when and where they need it – at location, on time, and accurately.

NGA's role in informed collection orchestration is in statute, policy, and practice and entrenched in our expertise as leaders in the GEOINT discipline. In the past year, NGA established the Joint Mission Management Center (JMMC) with the United States Space Force to consolidate our collection experts at NGA with Space Force Guardians, DoD, interagency, and Departmental Requirements Officers. The JMMC joins warfighters and intelligence professionals under NGA's roof to decrease the gap between collection requests and delivery, leveraging the whole-of-GEOINT constellation to optimize and deconflict collection operations in real time.

Informed collection orchestration also accounts for the growing role of commercial GEOINT. NGA prioritizes agile, flexible, and timely acquisition of commercial services and analytics as part of a concerted effort to meet the operational needs of partners across the NSG.

NGA leads a community-wide process to coordinate commercial GEOINT purchases across the government, maximizing our ability to share commercial imagery and analytics and preventing redundant acquisitions. NGA provides the Services, Combatant Commands, interagency, first responders, warfighters, and international partners access to commercial imagery through a web-based service known as Global Enhanced GEOINT Delivery (G-EGD). With over 400,000 G-EGD users, NGA delivered more than 325 million unclassified images to missions across the whole of government in 2024 alone.

NGA also delivers commercial analytic solutions which provide timely, shareable commercial GEOINT to warfighters. For example, we offer a "High-Risk Vessel Service" to the community that geolocated over 2,400 vessels of interest in the South China Sea between July and November of last year, providing warfighting intelligence elements reliable data and enabling partner integration.

Additionally, NGA is responsible for coordinating with the Commercial Remote Sensing Regulatory Affairs Office (CRSRA) at the Department of Commerce on legislative, regulatory, and policy activities for U.S. commercial remote sensing vendors, ensuring national security concerns and needs are balanced with promoting a robust U.S. space industrial base.

To manage the significant growth in the volume of GEOINT data and data sources available, NGA is making significant investments in automation to speed workflows, as well as AI/ML to fuse data to enable sense-making. We are leveraging computer vision to rapidly exploit data; using advanced modeling techniques to understand, correlate,

and predict activity; and integrating automated modeling capabilities to prompt dynamic collection.

Today, NGA is incorporating GEOINT AI into warfighting headquarters around the world, accelerating their operations and enabling lethality through programs like NGA Maven. NGA Maven has more than 20,000 active users across more than 35 Service and Combatant Command tools, quadrupling in number since March of 2024.

Our warfighters have confidence in NGA's AI-generated GEOINT because of our commitments to increasing the fidelity of target identification, improving geolocation accuracy, refining our test and evaluation process, and focusing on speed of delivery. In fact, NGA Maven has decreased targeting workflow timelines by as much as 80 percent, with one warfighting element's targeting cell seeing intelligence-operations timelines drop from hours to minutes from sensing to target engagement during a recent exercise.

NGA is also making strides with generative AI, developing geospatial agents to enable Large Language Models (LLMs) to seamlessly access geospatial data and aid in the creation of GEOINT — freeing up analysts for GEOINT exploitation requiring deeper analytical insight. We are conducting multiple pilots to explore the adoption of generative AI models to sift through millions of detections and GEOINT reports that will make a difference in the speed and accuracy of target identification, creating efficiencies in analysis, exploitation, targeting, and collection operations. These models offer NGA opportunities to better serve warfighters by reducing the latency associated with disseminating critical GEOINT.

NGA's investments in informed collection orchestration, commercial GEOINT, and AI are paying dividends in our support to border security, counternarcotics, humanitarian assistance, disaster relief, and combat operations. Following the issuance of Executive Order 14165, "Securing Our Borders," I directed the creation of NGA's Border Task Force at NGA headquarters and deployed officers to the border to support the GEOINT requirements of U.S. Northern Command, Department of Homeland Security (DHS), and Customs and Border Protection.

NGA's Support Team at USNORTHCOM also adjusted posture to match the increased requirements and operations tempo as the command stood-up the Joint Intelligence Task Force – Southern Border. Our GEOINT professionals are synchronizing, prioritizing, and orchestrating GEOINT for the whole of government approach to enhance border security operations, improve situational awareness, and inform senior leaders and policy makers.

When natural disaster struck the southeastern U.S. last autumn, NGA answered the call to support Federal, State, Local, and Tribal search and rescue efforts and damage

assessments in the wake of Hurricanes Helene and Milton. We mobilized personnel to support relief efforts in collaboration with DHS and other stakeholders, orchestrating satellite imagery over affected areas across the southeastern U.S., and making extensive use of commercial data to assist rescue operations and evaluate the status of road networks.

While our role in performing GEOINT analysis using space-based systems is relatively well known, we are also leveraging the space domain on a number of lesser-known missions with the help of our mission partners at NASA, the National Oceanic and Atmospheric Administration, and the U.S. Geological Survey. For instance, NGA maintains detailed, physical characterizations of our planet from the ocean floor to beyond the Earth's atmosphere. We are responsible for production and maintenance of data on more than 49,000 airfields and 70 million hydrography features worldwide, and provide products that our forces rely upon to navigate and operate safely around the globe. Just as with imagery analysis, we rely upon space-, air-, and land-based sensors to perform these critical functions.

Furthermore, NGA is responsible for guaranteeing assured precision and accuracy of GPS and maintaining the World Geodetic System 1984 (WGS-84) reference frame, which is the backbone for all geolocation. This improves GPS geolocation accuracy for government civil agencies and warfighters alike, guaranteeing assured precision, navigation, timing, and targeting.

While NGA is focused on enhancing the accuracy of GPS, we also recognize concerns about the system's vulnerabilities, driving us to innovate and develop alternatives. NGA is advancing capabilities to produce digital maps for navigation via magnetics, gravity, remote sensing, celestial, and elevation. These alternatives provide reliable navigation that is resistant to GPS/GNSS disruptions.

NGA must also anticipate and consider future Space GEOINT requirements of the Department of Defense and Intelligence Community. With an eye toward the future, we are gathering community needs for Geospatial-Intelligence on and about space. NGA is doing this in collaboration with the NSG to ensure all stakeholder requirements are represented in future investments and acquisitions.

In closing, NGA relies heavily on the data that comes from space systems to meet the GEOINT needs of our Department of Defense and Intelligence Community. We are more integrated across the community, and faster than ever before. We have unique expertise understanding the capabilities and limitations of our national and commercial GEOINT capabilities, as well as the experience necessary to meet needs ranging from navigation to solving intelligence problems.

Thank you and I look forward to answering your questions.



Vice Admiral Frank Whitworth

Director, NGA

Vice Admiral Frank Whitworth is the eighth Director of the National Geospatial-Intelligence Agency. He leads and directs NGA under the authorities of the Secretary of Defense and Director of National Intelligence. He became NGA's director on June 3, 2022.

Whitworth is a 1989 graduate of Duke University Durham, North Carolina, with a Bachelor of Arts in Political Science. He holds a Master of Arts in National Security Studies from Georgetown University, Washington, District of Columbia, as well as a diploma from the Naval War College in Newport, Rhode Island.



Whitworth's command tours included commander, Joint Intelligence Center Central; commanding officer, Navy Element of U.S. Central Command; and commanding officer, Kennedy Irregular Warfare Center.

Whitworth's operational tours included director of Intelligence for The Joint Staff, director of intelligence for U.S. Africa Command, director of Intelligence for Joint Special Operations Command, director of Intelligence and deputy director of Maritime Operations Center for Commander, U.S. Naval Forces Central Command, U.S. Fifth Fleet; director of Intelligence for a Special Operations Task Force in Afghanistan during three deployments supporting Operation Enduring Freedom; director of Intelligence for Naval Special Warfare Development Group; special assistant for Political-Military Affairs at U.S. Sixth Fleet during Operation Allied Force; indications and warning officer at U.S. Naval Forces Central Command, U.S. Fifth Fleet, in support of Operation Desert Storm; and intelligence officer for Fighter squadron 31 during USS Forrestal's deployment in support of Operation Provide Comfort.

Whitworth's shore-based tours included the National Security Agency, chief of targets for the U.S. Central Command area of responsibility; Navy federal executive fellow to American Enterprise Institute; senior duty officer at the White House Situation Room; intelligence briefer for the Chief of Naval Operations and Secretary of the Navy; and intelligence watch analyst at the Office of Naval Intelligence and the National Military Joint Intelligence Center.

Whitworth is a member of the Council on Foreign Relations. His decorations include the Defense Superior Service Medal (three awards), Legion of Merit, Bronze Star (four awards), Defense Meritorious Service Medal (four awards), as well as the Edwin T. Layton Leadership Award, Vice Admiral Rufus L. Taylor Leadership Award, the Army's Knowlton Award for excellence in intelligence, the Republic of France's Médaille de la Défense nationale (Gold), and the Defense Intelligence Agency Director's Award.

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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: FY26 Space Budget Hearing
STATEMENT OF: Major General Stephen G. Purdy,
Acting Assistant Secretary of the Air Force for Space Acquisition and Integration

May 14, 2025

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OVERVIEW

Chairman DesJarlais, Ranking Member Moulton, and distinguished members of the sub-committee, thank you for inviting me to testify before you today.

I want to personally thank the sub-committee for elevating the responsibilities of my position in the FY24 National Defense Authorization Act (NDAA) and permitting me to serve as the Acting Assistant Secretary of the Air Force for Space Acquisition and Integration (ASAF (SA&I)). You have empowered the Service Acquisition Executive for Space (Space SAE) to transform space acquisition with the following new authorities we have already implemented: Contractor Responsibility Watch List (CRWL); permitting continuous iterative prototyping and fielding for Middle Tier of Acquisition (MTA) for an unlimited number of subsequent periods; and Senior Advisor for C2.

I am committed to building on the innovative acquisition practices implemented over the past few years. Specifically, our focus shifted to building smaller while minimizing non-recurring engineering, awarding executable contracts, and delivering capabilities that work and are executed on schedule and on cost to give our warfighters a strategic edge. The cumulative effect of these changes has been to drive speed into acquisition, adopt best practices from across the national security space enterprise, and capitalize on innovation in the commercial sector. We realized improvements and I will provide more details throughout my statement.

Our adversaries continue to view the exploitation of the space domain as critical to their theory for victory in future conflicts. Specifically, peer adversaries have demonstrated their willingness to either violate international norms of behavior or conduct themselves irresponsibly in space in an increasingly unsafe and unprofessional manner by developing and/or fielding systems such as nuclear weapons in space, direct ascent weapons, nesting dolls, robots, directed energy, and jammers. We must continue to evolve our way of doing business to provide timely and relevant capabilities to the joint warfighter.

EVOLVING SPACE ENTERPRISE

Space acquisition is in a good place compared to years ago, and trending better. We have pushed accountability, improved software acquisition, implemented contract reform, established system engineering at the portfolio level, and embraced commercial solutions all with the goal of delivering capability to the warfighter faster. Our challenge is to expand the scope, and accelerate the pace, to continue evolving the business and culture of space acquisition. To that end, we need to develop a space acquisition culture and space acquisition professionals that will ensure new and current programs are structured and managed to deliver warfighting capabilities with speed and discipline. Our sustained and strategic advantage in space is threatened when we have programs delay deliveries or overrun cost. For this reason, we are prioritizing commercial technologies across all contracting actions and taking advantage of the Executive Order "Modernizing Defense Acquisitions and Spurring Innovation in the Defense Industrial Base" to elevate Other Transaction Authority (OTA) and Rapid Capability Offices' policies. These pathways continue to play a critical role in fast-tracking advanced aerospace capabilities, including artificial intelligence-enabled space systems in space servicing, and autonomy. Here are some of the key initiatives we have implemented that have resulted in measurable successes.

Accountability. As the Acting Space SAE, I am managing and holding programs accountable. Since May 2022, 15 major acquisition programs have had contracts, or even entire programs, restructured or cancelled due to cost, schedule, performance issues. This includes 12 contract terminations (6 of which are classified efforts), 2 program terminations (1 of which is classified), and 1 program restructure. Additionally, I applaud Congress for transferring oversight of the CRWL from the Commander of Space

Systems Command (SSC) to the Space SAE in the FY25 NDAA. Utilizing the CRWL at the SAE level allows us to apply appropriate pressures across the entire space enterprise. The SAE's oversight of the CRWL is another step toward ensuring accountability as an enterprise perspective. We are also willing to hold our acquisition leaders accountable by removing Program Managers when necessary.

Software Acquisition. We shifted the space portfolio away from massive, monolithic, winner-take-all ground software programs like Enterprise Ground Services (EGS) and Global Positioning System (GPS) Next-Generation Operational Control System (OCX). Instead, we've broken out our ground software acquisition into multiple components, using open architecture frameworks and tapping into Silicon Valley style software production contractors. We've learned and improved as we've moved from EGS, to Protected Tactical Enterprise Service, to Rapid Resilient Command and Control, to Future Operationally Resilient Ground Evolution (FORGE), and then to Evolved Strategic SATCOM ESS GRIFFON segment. Our use of the Software Acquisition Pathway (SWP) increased by 350% since mid-2023, now including 9 programs, aligning with the March 2025 Secretary of Defense memo on the preferred use of the software pathway.

Contract Reform. We appreciate Congress' and the Executive Order focus on utilizing and tapping into innovative contracting mechanisms. OTA utilization has significantly increased over the last few years, with new Other Transaction (OT) awards across the space portfolio increasing from 15 in FY22 to 86 in FY24, which is a 473% increase. The Space Development Agency (SDA) has used OTs extensively since its inception in 2019 and it is the default instrument for research and development awards. This flexibility has yielded significant efficiencies in crafting and releasing solicitations with simplified award terms and conditions and overall streamlining source selection documentation. SSC has also been a front-runner with OTs, using the Space Enterprise Consortium (SpEC) OTA since 2017. Demand for SpEC OTA was so high that the ceiling was increased from \$6 billion to \$12 billion in 2022. All SSC Program Executive Officers (PEO) have OTs in their portfolio, with average timelines to award ranging from 38 to 150 days depending on the organization and the complexity.

While there is a learning curve to using OTs, when used appropriately they clearly enable faster awards and, more importantly, earlier delivery of capability to the warfighter in critical mission areas. We have utilized OTs for space control, space domain awareness, assured access to space, and space sensing.

The MeshOne-T program leveraged an OTA contract through SpEC OTA as a pathfinder to rapidly deploy 15 node sites and communications in 20 months across U.S. Northern Command and U.S. Indo-Pacific Command (USINDOPACOM) to support Initial Operating Capability (IOC) of the next air defense system under Command, Control, Communications & Battle Management/Advanced Battle Management System called Cloud Based Command & Control.

Another example is Satellite Control Network (SCN) capacity. Currently, more than 450 satellite contacts occur daily to support critical on-orbit operations. The legacy SCN—a primary enabler of these activities—is increasingly overburdened. Growth in on-orbit capabilities will drive scheduling conflicts and capacity limitations resulting in reduced support for missions that rely on the SCN, jeopardizing operational readiness. We are concurrently working efforts at SSC and Space Rapid Capabilities Office (SpRCO) to get after this problem and “compete” the best solution. By leveraging SSC's Joint Antenna Marketplace (JAM), a flexible marketplace model, JAM will enable dynamic, real-time satellite C2 through adaptive scheduling of satellite contacts and data transport workloads at speed and scale using a marketplace to broker government or commercial antennas. The program takes a software-centric approach utilizing the Department's SWP and leverages OTAs to take advantage of innovation in commercial industry. SpRCO's Satellite Communication Augmentation Resource is relocatable, electronically steerable satellite comm systems (antennas, electronics, software) to expand satellite control comms bandwidth and flexibility that is designed to make multiple contacts simultaneously.

We are also seeing an increase in Commercial Solutions Openings (CSOs). SSC awarded the first CSO to increase National Security Space Launch (NSSL) Space Vehicle (SV) processing capacity. The team awarded 6 months from receiving commercial solutions for Western Range SV processing capabilities and is set to beat that timeline for the Eastern Range. Overall, this strategy saved over a year compared to traditional requirement development processes and back and forth with industry pre- and post-Request for Proposal, or 5+ years compared to a government-owned military construction effort. Operational Test and Training Infrastructure (OTTI) is also pursuing a CSO in four different areas of interest, currently completing Phase II pitches and is poised to move to Phase III which will result in contract awards.

We favor these strategies as they are easier for commercial and small businesses to more rapidly bring their capabilities to bear for the warfighter.

FORGING NEW SPACE ACQUISITION PATHWAYS

The Rapid Response Trailblazer-1 mission, launched on 16 December 2024, demonstrated an ability to execute launches on a condensed timeline with the launch campaign condensed from 24 months to less than five months and the SV07 pre-launch processing timeline reduced from six to three months. The launch showed the ability to rapidly deploy capabilities to meet warfighter needs. We are initiating a second rapid response mission to swap the GPS III-7 (SV08) and GPS III-F-1 (SV11) missions between United Launch Alliance (ULA) and SpaceX. The swap enables SV08's Initial Launch Capability (ILC) in early Summer 2025 while maintaining SV11's May 2027 ILC. Further, this move provides payload processing relief in late Summer/Fall 2025 while saving tens of millions due to the change from Falcon Heavy to Falcon 9.

The Remote Modular Terminal program delivers first-of-their-kind small, low-cost transportable systems to conduct ground-based electronic warfare against space systems in support of the Joint Force. A 38-business day contract award to start work resulted in the delivery of the first units in November 2023 representing contract award to delivery to the warfighter in 14 months.

Portfolio Systems Engineering. While empowered by statute, the office of the ASAF (SA&I) was limited in the resources it could apply towards technical integration of capabilities across PEO portfolios. This challenge slowed efforts down and increased costs to build consensus around standards, interfaces, and sometimes drove rework to adjust interfaces across programs. It also led to delays in some programs optimizing for the capability delivery in lieu of adopting enterprise capabilities such as defensive cyber operations.

To overcome these challenges we onboarded a Highly Qualified Expert responsible for the Space Systems Integration Office (SSIO) who also serves as the senior ASAF (SA&I) advisor for technical integration. Having a senior advisor of this caliber is essential to conducting the technical oversight of all space acquisition efforts. As the most technologically advanced service, this expert advises the SAE on technical aspects throughout all phases of acquisition to ensure capabilities are delivered and integrated to meet combatant command requirements for the joint warfighter. The near-term focus area is to assess the effectiveness of C2 systems from the sensor to the shooter to connect U.S. Space Command (USSPACECOM) warfighters to the missions. Under the auspices of SSIO, we are building PEO scorecards as an independent assessment of programs meeting U.S. Space Force (USSF) strategic guidance and progress towards capability integration. The PEO scorecards will focus on using data-in-the-system to measure attributes like "kill chain closure," "compliance with Force Design," and "cyber security integration."

Embracing Commercial Solutions. To fully embrace commercial opportunities in space acquisitions we must adapt our thinking and processes to take full advantage of the capabilities present in the competitive space marketplace. Through OTAs we are tapping into a diverse and innovative commercial launch industry base to ensure that National Security Space capabilities can be delivered on time, at a reasonable cost and with appropriate risk. In June 2024, we awarded the Phase 3, Lane 1 contract that allows a pool of qualified vendors to compete for launch task orders hyper-specific to space vehicle customer needs, including tailored mission assurance and accelerated integration timelines. This lane utilizes annual on-ramps of new providers, increasing competition and resiliency. Lane 1 procures risk-tolerant, commercial-like missions. In 2024, NSSL Lane 1 launch task orders were awarded to SpaceX for seven SDA launches and one National Reconnaissance Office (NRO) mission-set. These missions are on contract to begin launching a full year sooner than the traditional 2-year integration timeline. In March 2025 two new providers were onboarded onto Phase 3, Lane 1 to bring the total pool of providers to five and meets the Title 10 requirements to sustain a robust space launch industrial base. Initial awards saved \$40 million per mission compared to the average cost of Lane 2 missions with comparable profiles. These cost savings lower the costs of launches for national security space systems.

On 4 April 2025, we awarded Phase 3, Lane 2 Launch Service Procurement Firm Fixed-Price, Indefinite-Delivery Requirements contracts to SpaceX, ULA, and Blue Origin. Phase 3, Lane 2 procures launches for the most technically demanding, no-fail national security missions. The government anticipates awarding 54 missions from FY25 through FY29. Forty-seven of these missions will be divided between SpaceX, as the Requirement 1 provider, and ULA as the Requirement 2 provider, with SpaceX receiving 60% and ULA receiving 40%. The remaining 7 of the 54 missions will go to Blue Origin, as the Requirement Phase 3, Lane 2 provider. Blue Origin missions begin in the second order year. This contract saves \$1.7 billion compared to the Government's estimate for Phase 3, Lane 2 contracts while securing national security launch capacity and supply chain stability.

To close the gap between commercial provider advances and traditional space acquisition, the Space Force established the Commercial Space Office (COMSO) two years ago, which aligns with the DoD Commercial Space Integration Strategy and the USSF Commercial Space Strategy. Through this endeavor, the Space Front Door was created as the primary entry point for the commercial space sector to connect industry and the investment community with the right space enterprise agents. This encourages their ability to showcase technologies, learn about mission area requirements, and receive assistance with submitting their investment opportunities. The COMSO recently launched a revamped web industry engagement portal that successfully captured 656 vendor submittals of new ideas, products, and services. The tool currently integrates all Field Commands, USSPACECOM, and the Air Force Research Lab and will eventually integrate the NRO, National Geospatial-Intelligence Agency (NGA), National Aeronautics and Space Administration, and North Atlantic Treaty Organization Headquarters. The tool has been utilized to facilitate over 18 Government hosted Industry Engagement events with access to over 1,850 vendors in the system.

A recent Front Door success occurred with Orbital Watch, a new initiative designed to enhance unclassified threat information sharing with commercial space companies. The Commercial Satellite Communications Office (CSCO) continues to be the "one-stop shop" for all the DoD's Commercial SATCOM needs. In 18 months, CSCO supported 1,100 orders from Army, Navy, Air Force, and Marine Corps to deliver commercial satellite communications to warfighters. The Space Force is rolling out the Commercial Augmentation Space Reserve Framework (CASR), a contractually managed framework that ensures DoD has access to commercial capabilities in peacetime that can be surged and scaled to meet warfighter demands. CASR aims to enhance Space Force capabilities including international investment and collaboration to ensure access throughout the spectrum of conflict. In two short years, we have awarded four pilot awards, conducted our first CASR Wargame, with 14 companies participating, have conducted a commercial mission area analysis with USINDOPACOM, and have an ongoing effort with

U.S. European Command. Finally, we have established partnerships with NRO, NGA, and the Space Information Sharing and Analysis Center, allowing the Space Force to collaborate on requirements and encourage cost sharing while investing in industry and dual-use capabilities. This ensures our warfighters have access to the latest American and International partner innovation so that our acquisition programs deliver with speed and discipline.

Direct Warfighter Support. The Space Force continues to minimize barriers for commercial integration with operations through the USSF – Space Commercial Integration Office, which is composed of the Joint Commercial Operations cell (JCO) and the Commercial Integration Cell (CIC). The JCO operationalizes commercial data and analytics to augment space domain awareness for USPACECOM and other Combatant Commands. Working alongside the CIC and in a matrixed relationship with the Commercial Space Office and all Space Force Component Commands, the JCO leverages the agility of the commercial space sector to enhance national security. Composed of approximately 100 active, reserve, civilian, and contractor personnel, the JCO rapidly onboards commercial vendors, having trained and validated 18 companies. The JCO purchases commercial space domain awareness data through the Global Data Marketplace and places it in the USSF Unified Data Library for access across the DoD. While the JCO works to augment government capabilities with those provided by industry, the CIC uses government capabilities and processes to protect commercial space companies while receiving insights from attached industry liaisons. The JCO fosters collaboration by gathering anomalies and information from allies, partners, and commercial entities to establish clear notification thresholds for Notices to Space Operators. They have issued over 200 such notifications since 2021, proactively enhancing space flight safety. The JCO's comprehensive common operating picture is essential for the National Space Defense Center's critical operations.

While a budget reduction from \$35 million to \$9 million in FY25 has necessitated adjustments to the number of commercial contracts, the JCO continues to maximize its resources and remains a vital component in integrating commercial space capabilities into national security efforts, demonstrating the power of public-private collaboration.

The Space Force's OTTI, established with a single PEO in 2023, has revolutionized procurement for live, digital, and connected space ranges. OTTI rapidly developed cyber, range command and control, and electronic warfare testing capabilities, significantly increasing training exercises and fielding critical equipment. Since its inception OTTI has grown 7-fold, from 7 Cyber exercises in 2023 to over 50 in 2024 and 2025, as well as the Transportable Range Operations Center, an essential tool that supports offensive and defensive electronic warfare test and training. This capability has been essential to Crimson Stars, Vermillion Stars, and Scarlet Stars, key training and exercise events where we train and hone the operational acumen of cyber, Electronic Warfare, and Orbital Warfare specialists. Their innovative use of commercial space openings, Other Transaction Authorities, and interagency partnerships has accelerated acquisition and maximized investment returns, drastically improving the Space Force's ability to assess weapon system effectiveness and achieve space superiority.

ACQUISITION WORKFORCE DEVELOPMENT

The Space Force Acquisition Workforce shares a civilian acquisition workforce with the Air Force and will continue to develop civilians with deep space expertise capable of leading acquisition programs across the Department of the Air Force. The small size of the Space Force officer corps necessitates new approaches for growing Guardians who can work seamlessly across development, operations, and sustainment and can rapidly integrate Space Force capability with the Joint Force. We are responding to directed changes and external factors affecting acquisition career progression, leadership opportunities, and program stability.

Along these lines, I am also the functional authority for all engineers and program managers in the Space Force and am committed to developing the requisite breadth and depth to ensure our programs are led by purpose-developed leaders with operational experience and program management acumen. In late 2024, the Space Force established a new Officer Training Course (OTC) for all new Guardian officers. OTC will provide Guardians with a foundational understanding of Space Operations, Intelligence, Cyber Operations and an introduction to space acquisition. Upon completing OTC, all officers will serve in a 3- to 4-year operational tour. Officers will then likely meet a board to determine if they will transition into an Acquisition Specialist or Generalist track. In partnership with the Defense Acquisition University the team is building the first-ever acquisition Initial Qualification Training (IQT) to deliver an integrated program manager and engineer training course in order to better prepare our workforce to hit the ground running and immediately make a difference in delivering capability to the warfighter. This new IQT offering will provide all Guardians entering into their initial acquisition assignment with space specific acquisition training required to fill acquisition workforce positions. We are looking to expand this construct in the future with additional space specific acquisition training opportunities for mid-career and senior USSF acquisition workforce members.

As the Space Force implements OTC, operational tours, and stands up Mission Deltas, we will determine any impacts to manning and mission performance in acquisition organizations. The Space Force's decision to repurpose acquisition Lieutenant billets to support OTC and operational tours combined with looming reductions in the civilian workforce and Advisory and Assistance Services contractor reductions increase risk to program execution. The risk grows with the potential looming increase in Space Force acquisition programs. To mitigate the risk posed by the transition to a smaller workforce, the Space Force is evaluating our acquisition manpower needs and identifying opportunities for efficiency in accordance with Executive Orders and administration priorities. As decisions are finalized on current initiatives to resize the civilian workforce and to eliminate unnecessary programs and requirements, we will move quickly to adapt to the new acquisition workforce environment.

Fundamentally, the Space Force acquisition workforce remains focused on program execution: delivering programs on cost and schedule that work. Thus, we are developing an agile civilian and military acquisition workforce who is not only committed to providing paramount support to the warfighter, but one that can leverage the full range of acquisition authorities to move faster and more efficiently.

CHALLENGES

Transforming the space architecture to combat threats requires us to deliver warfighter capabilities on cost and schedule. Some challenging legacy programs remain, but we are aggressively managing these programs to ensure they deliver. I am committed to ensuring all PEOs remain accountable for their programs. As the Acting SAE, I continue to conduct quarterly program reviews to ensure both legacy and new programs remain on track. As stated earlier, these reviews have resulted in 15 contracts being cancelled or restructured to align with SAE guidance. I am closely following three long-standing troubled programs -- GPS Next-Generation OCX, Advanced Tracking and Launch Analysis System (ATLAS), and Military GPS User Equipment Increment 1 (MGUE Inc 1) and Increment 2 (MGUE Inc 2) -- which need to get over the finish line.

OCX. The OCX program remains challenging, highlighting the difficulties of developing complex C2 systems concurrently with large-scale software -- a practice we aim to avoid in the future. Despite this, we've achieved measurable success in 2025, testing 100% of all requirements, passing 613 of 623 (98%) requirements through developmental testing (as of April 18th), and making approximately 130 live operational contacts with legacy GPS satellites (IIR, IIR-M, and IIF) using all three SCN antenna types.

Key milestones include: first navigation payload initialization, successful Kalman filter convergence, and first broadcast of an OCX-generated signal tracked by an OCX monitoring station. By conducting site acceptance testing, integrated systems test, and transition risk reduction operations in parallel, we're maximizing test time and proactively resolving system issues, saving cost and schedule. Additionally, the program administers' personnel surges as required to meet test event schedule demands. Furthermore, the program has realized test execution efficiencies with the new Mission Delta organizational construct through dedicating operator support and test assets to test events. We anticipate government acceptance of OCX and achieving the Ready to Transition to Operations milestone in September 2025, after which the SpOC Commander will make a fielding decision.

Upon approval, the active constellation transfer and OCX trial period will begin in early FY 2026. OCX's Constellation Transfer "CTX" event assumes control of the GPS constellation through an 8-week, three-stage approach to ensure seamless transition for GPS users. It compares and gains confidence in system data (Stage 1), transferring vehicle control (Stage 2), and culminating in full operational capability. Fallback to the legacy system Architecture Evolution Plan (AEP) remains an option throughout CTX, with a successful Stage 3 (OCX Mission Operations Transfer) closing the CTX success criteria, at which point the 2d Navigation Warfare Squadron has confidence to reduce its crew size to primarily operate one command and control segment. At week 7 OCX will be in control of the complete GPS constellation and is the timeframe where there is confidence that the legacy system, AEP can start to reduce its crew size. The final program milestone is Operational Acceptance, in April 2026, where the SpOC and USSF – Space (S4S) complete validation of all OCX operational system requirements.

ATLAS. Since we divided ATLAS into more manageable deliverables, the program has made significant progress and is on schedule to deliver capability to be operationally accepted by September 2025; in accordance with the FY24 NDAA, if the USSF misses this date which was provided to the Congressional Defense Committees in April 2024, then it must cancel the ATLAS program. When coupled with existing Space Force C2 systems, ATLAS will provide sufficient capability to enable the decommissioning of the legacy Space Defense Operations Center (SPADOC) system. During the most recent integrated test event, ATLAS was in use for three weeks of rigorous 24/7 operations by the Space Force and coalition crews. The remaining development and test activities remain on track; as of 30 April 2025, 137 of 190 open Deficiency Reports (DR) have been resolved through development activities with the majority pending ops/test validation. DR closure timeline has been trending at around 100 days on average, with the most recent DR closures averaging less than 60 days. By the end of May 2025, the Space Force plans to transition ATLAS into an operational trial period, with SPADOC only running in backup mode with no plans to use SPADOC from that point forward.

MGUE Inc 1 and Inc 2. MGUE Inc 1 continues to improve. Since the January 2021 re-baseline, MGUE Inc 1 has successfully completed several major milestones in line with the Acquisition Program Baseline (APB). The final milestone for the ground system circuit card was completed in March 2021, and that card is in production. The aviation/maritime card completed Manufacturing Readiness Assessment in May 2023, enabling it to enter Low-Rate Initial Production which ultimately led to the completion of the program's second to last APB milestone: PEO Certification for the U.S. Navy Arleigh Burke Class Destroyer on 27 September 2024. Additionally, on 24 October 2024 the SAE pivoted aviation lead platform from the U.S. Air Force B-2 Bomber to the U.S. Army Gray Eagle MQ-1C to ensure timely capability delivery to the warfighter. The MQ-1C is on track to complete Developmental Testing by May 2025. Complete PEO Certification of the Aviation card (Program of Record's last APB milestone) is expected in Summer 2025, and Operational Testing by Fall 2025. Lastly, in accordance with FY24 NDAA Section 1685, the USD (A&S) stood up the M-Code Aviation Receiver Enterprise (MARE) JPO to unify all the Air Force receiver programs. The MGUE Inc 1 sustainment effort will be transferred to the Air Force MARE JPO in the near future; a current plan of action is being approved.

Currently, the MGUE Inc 2 program has minimized a significant amount of risk: one of the two vendors do not require an Application-Specific Integrated Circuit re-spin and the second vendor will know if a re-spin is required in the next 3 months. This is a significant feat as industry has a very low first-pass yield rate (30%). Additionally, on 9 April 2025, an agreement was reached to transfer program responsibility of the Acquisition Category 1D MGUE Increment 2 from the USSF to the USAF. The PEO for Military Communications and PNT (USSF) and PEO for Electronic Systems (USAF) will jointly develop a plan of actions and milestones to enable a smooth transition of Milestone Decision Authority, funding profile, and any non-personnel related considerations.

National Security Space Launch (NSSL). In NSSL Phase 2, the ULA Vulcan program has performed unsatisfactorily this past year. Major issues with the Vulcan have overshadowed its successful certification resulting in delays to the launch of four national security missions. Despite the retirement of highly successful Atlas and Delta launch vehicles, the transition to Vulcan has been slow and continues to impact the completion of Space Force mission objectives. To address these challenges ULA has increased its engineering resources and management focus to resolve design issues. Government and Federally Funded Research and Development Center personnel have increased involvement in technical and program management challenges. ULA has also lost launch opportunities on the NSSL Phase 3, Lane 1 contract due to not having a certified launch vehicle until April 2025. ULA completed certification of their Block 0 design for the Eastern Range on 25 March 2025 with open work. Risk reduction plans have been agreed to and signed between the Space Force and ULA to reduce known risks to flyable "Low-Medium" prior to the first NSSL Vulcan launch. The first NSSL Vulcan mission is USSF-106 with an ILC date in July 2025. Elevated mission risks are assessed and accepted by the Space Flight Worthiness Certification authority during the Flight Readiness Review (FRR) prior to every NSSL launch. The FRR is typically scheduled 1-2 weeks prior to launch.

For these programs, the prime contractors must re-establish baselines, establish a culture of accountability, and repair trust deficit to prove to the SAE that they are adopting the acquisition principles necessary to deliver capabilities at speed, on cost and on schedule.

ENERGIZING THE SPACE ACQUISITION ENTERPRISE

The expanded acquisition authorities mentioned earlier have allowed us to engage with and incorporate commercial capabilities more rapidly than ever before. While this is now yielding results, we recognized that internally we needed to do a better job understanding and writing space acquisition program requirements. We, in conjunction with our S2 (intelligence), S5 (requirements), and SSC (program office) counterparts, are aggressively reviewing these requirements to identify tradeoffs that deliver capability faster and are restructuring programs with warfighter input based on those reviews. We first applied this change to the Space Domain Awareness portfolio and have already seen the benefits of this review.

Recognizing the need in 2024, we restructured the Geosynchronous (GEO) Space Situational Awareness Program (GSSAP) follow-on effort around requirement tradeoffs for faster delivery. The Space Force issued a market research RFI to understand industry's current space domain awareness capabilities in GEO. Based on feedback to the RFI, this mission area presented an optimal opportunity for commercial competition, especially based on what technology is commercially available. On 28 February 2025, I issued an Acquisition Decision Memorandum (ADM) which directed SSC to come to me with a plan for a proliferated, GEO Space Domain Awareness-capable reconnaissance and surveillance architecture. Particularly, this ADM focused on maximizing competition based on mature technology. Moreover, the

Space Force wants to leverage existing government and industry investments to increase capability, technology refresh rates, and capacity to drive down system cost.

Tradeoff Analysis. We learned from this effort that we needed a more refined process to relook at requirements to incorporate advancements being made across the commercial space enterprise. To codify these changes, as part of the February ADM, the GSSAP PEO evaluated industry capabilities versus Space Force mission requirements. The goal was to determine what requirements could be delayed to integrate commercial capability now. By integrating capability now, we open future opportunities to build up a tranche-style architecture—like those used by the Space Development Agency—to rapidly deliver capability based on desired requirements. Finally, I recently issued a second ADM to the GSSAP program, which directed the PEO to leverage the Middle Tier Acquisition pathway. The Space Force understands the Administration's desire to move quickly and believe this path affords us that opportunity. This program is trailblazing the way the Space Force streamlines acquisitions and will be a major win as it pertains to delivering capability to our warfighters.

To ensure consistent direction across the enterprise, I also requested evaluations of seven other program structures and risk exposures by issuing seven additional ADMs consistent with the GSSAP follow-on ADMs. This direction was reaffirmed when the Administration issued directives aimed at reforming defense acquisition and pulling more private sector capabilities into the federal government.

The ADM guidance makes it clear that PEOs must be accountable to prevent challenges we've faced in our past. To that end, examples of key deliverables include:

- Tasking certain PEOs with investigating alternative architectures, prototypes, alternatives, and acquisition approaches
- Driving modifications for ground segments and user terminal solutions
- Incorporating commercial capabilities
- Evaluating pros/cons, cost, schedule performance, risks and barriers
- PEOs providing the Space SAE with updates on what they find so we can respond to the Executive Order targeting speed, innovation and commercial integration in acquisition strategy

This portfolio-wide review will continue to assess how lessons learned from programs like GSSAP could be incorporated to accelerate capabilities or reduce risk.

Another tool used to manage the enterprise is the Space Acquisition Council (SAC) as it serves as a mechanism for fostering integration. Thanks to Congress, the SAC continues to be an integration forum among key leaders in the National Security Space community. Monthly meetings have covered a wide range of key topics with all major space stakeholders. The SAC remains a valuable tool to ensure coordination and synchronization of the National Security Space enterprise. The SAC has been instrumental in evaluating sensor-to-shooter information flows to close four mission threads identified by USSPACECOM. SSC proposed a Phased Increment Plan based on Missile Defense Agency practices to prioritize resources for delivering capabilities to USSPACECOM. In February 2025, SSC provided status on 13 Risks, Issues, and Gaps which included an update on its partnership with Space Training and Readiness Command to deliver the first increment of C2 capabilities in 2026.

Venture Capital. Another exciting avenue we are pursuing across the enterprise focuses on incorporating Venture Capital (VC)/Investment into space acquisition. The Space Force is embedding VC

principles and private investment signals into its acquisition and capability development processes. Historically, space acquisition lacked the tools and cultural fluency to fully leverage the momentum of the commercial investment sector, which now exceeds \$50 billion annually. This gap limited our ability to adopt cutting-edge innovations at the pace required in a contested and dynamic space domain. To close this gap, we are scaling the use of flexible acquisition pathways such as OTAs and expanding strategic partnerships with organizations like SpaceWERX and Defense Innovation Unit (DIU). These efforts are enabling us to adopt VC-style decision-making that is rapid, risk-tolerant, and outcome-driven.

Through this new perspective, we looked at elements of how successful VC firms identify, assess, support, and scale startups to adopt the appropriate elements into defense acquisition workflows. This approach represents a significant shift from traditional DoD procurement, which is typically slow, risk-averse, and compliance-driven.

This resulted in a relook at five key areas where we are applying VC principles: 1) Portfolio –Based Risk Management, 2) Speed and Iteration over Perfection, 3) Market Signaling and Co-Investment, 4) Founder and Team Assessment, and 5) Stage Gated Capital Deployment. Utilizing these VC principles nets benefits including:

- Encouraging innovation and tolerance for failure, accelerating the discovery of breakthrough capabilities.
- Enabling faster fielding of usable solutions and avoiding over-engineered, outdated systems.
- Aligning DoD funding with scalable, dual-use companies already validated by the commercial market.
- Avoiding over-reliance on legacy primes and tapping high-performing entrepreneurial talent.
- Reducing waste and creating accountability while maintaining agility.

Innovative Acquisition and Development. Innovative businesses continue to face challenges in navigating the lengthy and complex DoD contracting process—particularly in crossing the “Valley of Death,” where promising technologies stall before operational transition. SpaceWERX, a directorate within AFWERX and the Space Force’s innovation arm, is designed to close that gap. By empowering collaboration with innovators, non-traditional vendors, and venture capitalists, SpaceWERX is accelerating capability delivery to the warfighter. To date, SpaceWERX has executed over 1,000 contracts through its Ventures, Spark, and Prime programs. These pathways are tailored to strengthen the U.S. defense industrial base and help commercial startups scale. Ventures has invested \$32 million in Small Business Innovation Research (SBIR) funds with 18 companies focused on Tactically Responsive Space—generating \$792 million in follow-on government contracts and \$570 million in private capital investment. In FY24–25, Ventures is executing \$93 million in Strategic Funding Increase (STRATFI) awards to 8 companies in coordination with mission partners like Air Force Research Lab, SSC, and USSPACECOM. Across STRATFI and Tactical Funding Increase (TACFI) programs, 25 companies have been selected, matching \$97.8 million in government funds with \$340.9 million in private investment.

We are institutionalizing these innovation pathways into acquisition strategy. By integrating private investment trends into market assessments and program planning, we are ensuring space acquisition is both operationally driven and capital-aware. This model—grounded in commercial capital, innovation incentives, and warfighter needs—is redefining how the DoD acquires space capability: faster, smarter, and with lasting impact.

By investing in multiple space companies using SBIR, TACFI, and STRATFIs, we are energizing the space industrial base by reducing barriers to entry, and helping companies navigate and mature

throughout the acquisition process. These companies are then able to bid on our new programs as we encourage them to switch to more commercial-like models. We have reduced barriers that resulted in the infamous Valley of Death, and created opportunities by carving out existing programs, removing requirements, and then bidding them back out to industry where STRATFI companies are now bidding. This mindset is vastly different from our traditional model of building a big new program of record with new funding, and then proving we've crossed that valley. Ultimately, we have opened the door to new industry investment and their ability to innovate quickly by eliminating barriers and encouraging companies to achieve technical maturity.

CONCLUSION

While awareness of the battlespace is critical, the ability to deny or defeat threats in, from, and to space is paramount. We are investing in classified programs that include capabilities to counter an adversary from using space to attack the U.S. homeland or the Joint Force. These investments, which cannot be discussed in detail in an unclassified setting, are fundamental to ensure our ability to have and maintain space superiority.

As I close, let me share some of our most recent successes that show how we are focusing on driving speed, adopting new technologies, and incorporating innovations from commercial space. The EPS is a Polar Military Satellite Communications system that provides protected communications (anti-jam and low probability of intercept and detection) for users in the North Polar Region. The Space Force procured two replenishment EPS payloads, the Enhanced Polar System - Recapitalization (EPS-R). These EPS-R payloads were hosted on two Space Norway satellites which were launched in August 2024 and are projected to reach IOC in 2025. This initiative promotes U.S. policy to strengthen international partnerships and saves an estimated \$900 million in costs for the U.S. Government.

On 11 December 2024, the OTTI team fielded the Transportable Range Operations Center, an essential tool that supports offensive and defensive electronic warfare test and training. This capability has been essential to Crimson Stars, Vermillion Stars, and Scarlet Stars, key training and exercise events where we train and hone the operational acumen of cyber, Electronic Warfare, and Orbital Warfare specialists.

On 20 January 2025, the Unified Data Library (UDL) team provided critical support to execute Counter-Small Unmanned Aerial Systems (C-sUAS) operations during the Presidential Inauguration using the Unclassified UDL as the data fabric for the Operations Center at Joint Base Andrews. The UDL ingested 1.4 million data tracks from Multi-Environmental Domain Unmanned Systems Application sensors enabling threat classification of sUAS in the Washington D.C. air space.

On 2 February 2025 a U.S. space domain awareness payload hosted on Japan's Quasi-Zenith Satellite 6 successfully launched on a Japanese H-3 launch vehicle from the Yoshinobu Launch Complex at the Aerospace Exploration Agency's Tanegashima Space Center in Japan. This is the first bilateral U.S.-Japan cooperative space effort focused on national security, and the first of two launches as part of the JAXA Quasi-Zenith Satellite System Hosted Payload program. The satellite will deliver near real time data to the Space Surveillance Network, bolstering the DoD understanding of the Geosynchronous Orbit regime above the Indo-Pacific region.

On 28 March 2025, OTTI rapidly delivered a solution to close a 2d Navigation Warfare Squadron SPAFORGEN gap and train the first crew ahead of the GPS OCX Block 1 constellation cutover and Operational Acceptance campaign beginning in early FY2026. By identifying and securing an unused space in Schriever Space Force Base for the Space Standardized Trainer (SST) and utilizing repurposed hardware, the OTTI team responded to the need within 2 weeks, enabling crew training and providing

“train the trainer” sessions for instructors. Additionally, the team plans to field a user-informed GPS OCS SST software update in May 2025.

On 25 March 2025, the Assured Access to Space (AATS) PEO certified the Vulcan launch system for NSSL missions in five of the nine reference orbits. ULA is now eligible to launch NSSL missions as one of two certified providers.

On 27 March 2025, AATS awarded NSSL Phase 3, Lane 1 FY25 On-Ramp Indefinite Delivery/Indefinite Quantity (IDIQ) contracts to Rocket Lab and Stoke Space. This brings the number of Lane 1 Launch Service Providers to five, joining Blue Origin, SpaceX and ULA. Once Stoke Space and Rocket Lab complete their first successful launch, they can then compete for launch service task orders. The next opportunity for emerging providers or systems to on-ramp to the Lane 1 IDIQ contract will occur in 1QFY26.

On 4 April 2025, AATS awarded NSSL Phase 3, Lane 2 Launch Service Procurement Firm Fixed-Price, Indefinite-Delivery Requirements contracts to SpaceX, ULA, and Blue Origin.

On 8 April 2025, SSC & Mission Delta 3 Sustainment Squadron signed the first two Counter Communication Systems; Meadowland Development Systems (MDLS) DD250s allowing L3Harris to transfer the MDLS development system to the government in preparation for the Government Integrated Test which started April 2025.

On 24 April 2025, Space Operations Command operationally accepted the Weather System Follow-On Microwave capability to meet six of the twelve highest Space Based Environmental Monitoring Gap requirements. SV1 launched on 11 April 2024 via USSF-62 allowing the program to reach IOC. This program was delivered on cost, within schedule, while meeting performance requirements. Full Operational Capability is expected this Fall and will replace the Defense Meteorological Satellite Program's passive microwave coverage capabilities in Low Earth Orbit early morning orbit.

On 25 April 2025, Space Based Infrared Survivable Endurable Evolution (S2E2) was operationally accepted by Space Operations Command. S2E2 replaces the legacy Air National Guard-operated Mobile Ground System, originally developed in the 1960s to support Defense Support Program operations, with a modern, transportable ground station capable of processing data from the Space Based Infrared System and nuclear detonation detection systems. Designed to operate through all phases of a conflict, S2E2 reinforces the endurance and resilience of the nation's missile warning architecture, supporting a foundational mission of the Space Force and its joint and allied partners.

And as I mentioned earlier the Space Force is evaluating requirements for tradeoffs within the space-based GEO Space Domain Awareness mission (e.g., GSSAP) and is pursuing a streamlined, competition-focused approach to delivering capability quickly. As SAE, I issued two ADMs within a 2-month span to motivate the GSSAP program office to move quickly, in alignment with executive branch policy as recently as 30 April 2025. The team has rapidly developed an acquisition plan that maximizes commercial competition, and the Space Force views this mission area as ripe for ally and partner collaboration.

These are examples of how we are evolving, managing, and delivering for the space enterprise and have already begun implementing steps to ensure capability gets to the warfighter quicker. We are looking forward to integrating changes by following the Administration's Executive Orders to ensure taxpayers' dollars are being spent efficiently and the warfighter is getting necessary capabilities on cost and schedule.

We continue to transform the space architecture to be more resilient and provide additional capabilities for the Joint Force. Our focus continues to be on speed in our acquisitions and delivering programs on cost and schedule. The additional authorities granted to the SAE, focusing on speed utilizing those authorities to acquire smaller capable systems faster, and tapping into the burgeoning commercial space sector all allow us to combat the threat and maintain our preeminent space superiority.

I am extremely proud of our military and civilian Space Force acquisition professionals. Their continued dedication to the unique skill set needed to succeed in acquisitions, flexibility to deliver capability to the warfighter as fast as possible, and unwavering commitment to the defense of this great nation is incredibly inspiring. Thank you to the Committee for all your support to the Space Force and space acquisition. I look forward to your questions.

4/30/25, 10:58 AM

Stephen G. Purdy, Jr.



BIOGRAPHY

UNITED STATES SPACE FORCE

MAJOR GENERAL STEPHEN G. PURDY, JR.

Maj. Gen. Stephen G. Purdy, Jr., is the Military Deputy, Office of the Assistant Secretary of the Air Force for Space Acquisition and Integration, Washington, D.C. He also serves as the Space Force University Partnership Program Champion for the University of Texas Austin.

Maj. Gen. Purdy as Military Deputy is responsible for research and development, worth more than \$24 billion annually. His responsibilities include crafting program strategies and options for representing DAF positions to the office of the Secretary of Defense, Congress and the White House.

Maj. Gen. Purdy entered the Air Force as a Distinguished Graduate of the Reserve Officer Training Corps at Baylor University in 1993. He has served in a variety of engineering, acquisition and policy capacities, including assignments at the Air Force Laboratory, the Pentagon, Congress, Space and Missile Systems Center and Headquarters United States Space Force. He has served as an Air Force Intern, Space/Nuclear/Cyber Congressional Appropriations Liaison, Materiel Leader in the Evolved Expendable Launch Vehicle Program, Senior Materiel Leader for the Advanced Extremely High Frequency Program, Director Special Programs, Space and Missile Systems Center, and as the dual hatted Space Operations Command's Director, Requirements, Architectures and Analysis and the Director, Plans, Programs and Financial Management. Prior to his current assignment, General Purdy was quad hatted as Program Executive Officer for Assured Access to Space; Commander, Space Launch Delta 45; Director of Launch and Range Operations, Space Systems Command; and Director of the Eastern Range, Patrick Space Force Base, Florida.



EDUCATION

1993 Bachelor of Science in Engineering (Computer Emphasis), Baylor University, Texas
 1995 Masters of Science in Computer Science, Baylor University, Texas
 1999 Distinguished Graduate, Squadron Officer School, Maxwell Air Force Base, Ala.
 2001 Master of Arts, Organizational Management, George Washington University, Washington, D.C.
 2006 Congressional Fellow, Air Force Legislative Fellows Program, US Senate, Washington, D.C.
 2010 Certificate in Legislative Studies, Georgetown University, Government Affairs Institute, Washington, D.C.
 2010 Program Managers Course (PMT 401), Defense Acquisition University, Fort Belvoir, Va.
 2014 Masters of Science, National Security Strategy, National War College, National Defense University, Washington, D.C.
 2014 Executive Program Manager's Course (FMT 402), Defense Acquisition University, Fort Belvoir, Va.
 2017 Leadership Development Program, Center for Creative Leadership, Greensboro, N.C.
 2019 Executive Leadership Seminar, University of North Carolina, Chapel Hill, N.C.

ASSIGNMENTS

1. September 1995-December 1997, Simulation Systems Engineer, Wright Laboratory, Wright-Patterson AFB, Ohio.
2. January 1998-July 1999, Executive Officer, Air Vehicles Directorate, Air Force Research Lab, Wright-Patterson AFB, Ohio
3. August 1999-May 2001, Air Force Intern, Pentagon, Washington, D.C. (January 2000 - June 2000, Intern, Nuclear Matters, Deputy Assistant to the Secretary of Defense, Office of the Secretary of Defense, Washington D.C.; June 2000-December 2000, Intern, Space Programs, Assistant Secretary of the Air Force for Acquisition, Headquarters U.S. Air Force, Washington, D.C.).
4. June 2001-December 2001, Chief, Atlas V Booster, Evolved Expendable Launch Vehicle Prog, Los Angeles AFB, CA.
5. January 2002-May 2003, Chief, Atlas V Avionics, Evolved Expendable Launch Vehicle Program, Los Angeles AFB, Calif.
6. June 2003-March 2004, Chief Engineer, Atlas V, Evolved Expendable Launch Vehicle Program, Los Angeles AFB, Calif.
7. March 2004-July 2005, Joint Counterair Manager, Global Power Programs, Assistant Secretary of the Air Force for Acquisition, Headquarters U.S. Air Force, Washington, D.C.
8. August 2005-December 2006, Fellow, Air Force Congressional Legislative Fellows Program, Headquarters U.S. Air Force, Washington, D.C. (Defense Fellow for United States Senator Pete V. Domenici, State of New Mexico).
9. January 2007-December 2007, Deputy, Congressional Appropriations Strategy and Engagement Division, Congressional Budget and Appropriations Office, Deputy Assistant Secretary of the Air Force (Budget), Headquarters U.S. Air Force, Washington, D.C.
10. January 2008-August 2008, Chief, Congressional Appropriations Strategy and Engagement Division, Congressional Budget and Appropriations Office, Deputy Assistant Secretary of the Air Force (Budget), Headquarters U.S. Air Force, Washington, D.C.
11. August 2008-June 2009, Space and Nuclear Congressional Liaison, Congressional Budget and Appropriations Office, Deputy Assistant Secretary of the Air Force (Budget), Headquarters U.S. Air Force, Washington, D.C.
12. June 2009-May 2010, Space, Nuclear and Cyber Congressional Liaison, Congressional Budget and Appropriations Office, Deputy Assistant Secretary of the Air Force (Budget), Headquarters U.S. Air Force, Washington, D.C.

4/30/25, 10:58 AM

Stephen G. Purdy, Jr.

13. June 2010-June 2011, Senior Military Assistant/Executive Officer, Deputy Under Secretary of the Air Force (Space Programs), Headquarters U.S. Air Force, Washington, D.C.
14. July 2011-April 2012, Materiel Leader (Squadron Commander equivalent)/Chief, Evolved Expendable Launch Vehicle Strategic Planning Branch, Launch and Range Systems Directorate, Space and Missile Systems Center, Los Angeles AFB, Calif.
15. April 2012-January 2013, Materiel Leader (Squadron Commander equivalent)/Chief, Evolved Expendable Launch Vehicle Program Management Branch, Launch and Range Systems Directorate, Space and Missile Systems Center, Los Angeles AFB, Calif.
16. February 2013-June 2013, Materiel Leader (Squadron Commander equivalent)/Chief, Evolved Expendable Launch Vehicle Program Management Branch, and Acting Branch Chief, Evolved Expendable Launch Vehicle-New Entrant Acquisitions, Launch and Range Systems Directorate, Space and Missile Systems Center, Los Angeles AFB, Calif.
17. July 2013-June 2014, Student, National War College, National Defense University, Fort Lesley J. McNair, Washington, D.C.
18. June 2014-June 2017, Senior Materiel Leader (Group Commander equivalent) and Division Chief, Protected Satellite Communications (Advanced Extremely High Frequency [AEHF] Satellite Program), Military Satellite Communications Systems Directorate, Space and Missile Systems Center, Los Angeles AFB, Calif.
19. June 2017-March 2020, Senior Materiel Leader (Wing Commander equivalent) and Director, Space Superiority Directorate, Space and Missile Systems Center, Los Angeles AFB, Calif.
20. March 2020-June 2020, Acting Director, Plans, Programs, Financial Management, Headquarters United States Space Force, Peterson AFB, Colo.
21. June 2020-August 2020, Director, Plans, Programs, Financial Management, Headquarters United States Space Force, Peterson AFB, Colo.
22. August 2020-October 2020, Dual Hatted, Director, Strategic Requirements, Architectures and Analysis and Director, Plans, Programs and Financial Management, Headquarters United States Space Force, Peterson AFB, Colo.
23. October 2020-January 2021, Dual Hatted, Director, Strategic Requirements, Architectures and Analysis and Director, Plans, Programs and Financial Management, Headquarters Space Operations Command, Peterson AFB, Colo.
24. January 2021-May 2021, Commander, 45th Space Wing; and Director, Eastern Range, Patrick SFB, Fla.
25. May 2021-August 2021, Commander, Space Launch Delta 45; and Director, Eastern Range, Patrick SFB, Fla.
26. August 2021-February 2022, Commander, Space Launch Delta 45; and Director, Eastern Range; and Director of Launch and Range Operations for Space Systems Command, Patrick SFB, Fla.
27. February 2022-June 2023, Program Executive Officer for Assured Access to Space; and Commander, Space Launch Delta 45; and Director, Eastern Range; and Director of Launch and Range Operations for Space Systems Command, Patrick SFB, Fla.
28. June 2023-present, Military Deputy, Office of the Assistant Secretary of the Air Force for Space Acquisition and Integration, HAF, the Pentagon, Arlington, Va.

MAJOR AWARDS AND DECORATIONS

Defense Superior Service Medal
Legion of Merit
Meritorious Service Medal with three oak leaf clusters
Air and Space Commendation Medal with one oak leaf cluster
Air and Space Achievement Medal with two oak leaf clusters
Air and Space Organization Excellence Award with seven oak leaf clusters

OTHER ACHIEVEMENTS

Lt Gen John W. O'Neill Award for Outstanding Program Director, 2019
FCW's, The Federal 100 for Exceptional Federal IT Contributions, 2022

EFFECTIVE DATES OF PROMOTION

Second Lieutenant Dec. 18, 1993
First Lieutenant Nov. 2, 1996
Captain Nov. 1, 1998
Major April 1, 2005
Lieutenant Colonel March 1, 2009
Colonel Oct. 1, 2014
Brigadier General Aug. 6, 2020
Major General Dec. 1, 2022

(Current as of November 2023)



**WITNESS RESPONSES TO QUESTIONS ASKED DURING
THE HEARING**

MAY 14, 2025

RESPONSE TO QUESTIONS SUBMITTED BY MR. BELL

Admiral WHITWORTH. For commercial geospatial analytics, NGA practices a “buy once, share many” concept that both discourages uncoordinated purchases and encourages the procurement of commercial data and analytics with broad U.S. Government rights to that information.

To implement this approach, NGA leads regular interagency forums, which include the U.S. Space Force, combatant commands, NRO, and other consumers across the National System for GEOINT, to prioritize community needs for commercial solutions. This ensures resources are used effectively while providing the transparency necessary to prevent redundant acquisitions by the U.S. Government.

Commercial imagery is managed via an interagency process. NRO is responsible for funding, acquisition, and execution of contracts for commercial imagery. NGA is responsible for coordinating and tasking requests for imagery from the IC and DoD. We also make this imagery available to partners across the U.S. government, including the IC, DoD, and civilian agencies through our Global Enhanced GEOINT Delivery (G-EGD) service, which is available on the World Wide Web as well as on SECRET networks. [See page 21.]

QUESTIONS SUBMITTED BY MEMBERS POST HEARING

MAY 14, 2025

RESPONSE TO QUESTIONS SUBMITTED BY MR. WILSON

Mr. WILSON. Major General Purdy, Space Domain Awareness (SDA) is critical to the Space Force's mission. I believe our ability to have situational awareness in space will be as important as it currently is on the ground for our armed forces.

What is DOD's assessment of its current ability to maintain Space Domain Awareness—that is, analyze space related activity and characterize intent required to predict potential adversary activity?

How are you taking commercial capabilities for Space Domain Awareness into account?

General PURDY. It is important that we understand the role Space Domain Awareness (SDA) plays in supporting both space and joint operations. Our current SDA architecture is robust and we are investing in both our ground and space-based layers as well as across multiple phenomenologies (e.g., radar and optical). We are not only investing in new capabilities like the Deep Space Advanced Radar Capability and upgrading our legacy Ground-based Electro Optical Deep Space Surveillance System, but we are also modernizing our legacy missile defense radars, such as the Perimeter Acquisition Radar Attack and Characterization system and Upgraded Early Warning Radar systems, which perform critical SDA functions as part of their mission. Investing in current and future SDA systems across multiple domains and phenomenologies ensures the U.S. Space Force provides timely characterization and warning of all friendly and adversarial actions in space.

Furthermore, commercial capabilities are critical to our space architecture. Commercial capabilities are adding to - not replacing - the existing baseline architecture as a cost-effective way maintain pace with the rapid growth of on-orbit and rapid pace of technological innovation. Our priorities, and ultimately the mix of government-owned and commercial capabilities that contribute to our overall space domain awareness, will continue to be based on our warfighting priorities.

Mr. WILSON. Given the accelerating pace of conflict and the need for resilient, scalable capabilities, how does the Space Force assess when commercial solutions can meet mission needs faster and more affordably than government-build alternatives?

General PURDY. The diversity and complexity of the threats we face are accelerating, but so is the technical innovation in the private sector, which has long surpassed innovation in government. We are constantly reassessing our requirements and commercial capability, using SpaceWERX SBIR Phase 1 and Phase 2 contracts to explore the usefulness of new technologies and the viability of new companies to evaluate when to incorporate commercial into a program of record. As an example, we recently did this with the Geosynchronous Space Situational Awareness Program (GSSAP) follow-on program (RG-XX) where we have established requirement trade-offs for faster delivery. It is a prime example of how opening the requirement trade space provides commercial competitors the opportunity to compete which, in-turn, allows the U.S. Space Force to deliver a capability at scale, at a reduced cost, and on a faster timeline. We are also reducing classification requirements to leverage commercial product lines and industry investment as well as continue to update security postures to increase the number of viable entrants.

Mr. WILSON. We have heard that the budget request includes significant cuts to commercial space solutions. Does the Department still view commercial solutions as key to its future space architecture, or are these potential cuts indicative of a return to traditional acquisition models?

Ms. YAFFE. The Department views commercial space solutions as key to our future space architecture. Secretary Hegseth has said that we should determine where we can more aggressively embrace commercial providers and where to build on the success of commercial launch and commercial satellite communications and harness the potential within commercial providers to expand into new mission areas, where appropriate.

RESPONSE TO QUESTIONS SUBMITTED BY MR. MOULTON

Mr. MOULTON. Dr. Scolese, as commercial remote sensing has dramatically improved in both capability and capacity how has the NRO current and future architecture changed to reflect that commercial is now capable of accomplishing some of the mission previously reserved only for NTM?

Dr. SCOLESE. The National Reconnaissance Office (NRO) is building the largest and most capable, diverse, and resilient overhead constellation in its history and commercial capabilities play a key role. Using multiple industry providers, NRO's Electro-Optical Commercial Layer (EOCL) contracts have increased commercial capacity and improved revisit rates, which has allowed NRO to tailor the development of its systems and capabilities to address the most challenging and sensitive missions.

Commercial and national systems complement one another and allow us to satisfy a larger and broader set of requirements from across the user community, from the Department of Defense to the Intelligence Community to federal civil missions. Commercial systems are increasingly capable of delivering varying resolutions, coverages, and phenomenologies, i.e., radar, radio frequency (RF), hyperspectral imaging (HSI), etc. The increase in capability of commercial systems allows us to satisfy foundational use needs, thereby preserving our national systems for the most sensitive and complex national security missions.

However, aside from one commercial EO provider, all of these U.S. commercial remote sensing capabilities are fairly nascent. While they may be able to meet one part of a requirement such as quality of the product, they are unable to meet other requirements of the product set by the Department of Defense and the Intelligence Community, especially timeliness. NRO continues to assess and consider utilization of commercial capabilities during each major iteration of its government owned systems and continues to award numerous study contracts on this topic to see where commercial capabilities can be utilized.

Mr. MOULTON. Dr. Scolese, have you seen the requirements coming from the functional managers (NGA/NSA) change appreciable to reflect the capability and capacity that commercial remote sensing provides to both the DoD and IC? If so, how? If not, have you asked the functional managers why not?

Dr. SCOLESE. Yes we have, in particular for commercial radar and radio frequency capabilities. As these commercial remote sensing capabilities have proven to have mission value, National Geospatial-Intelligence Agency (NGA) and National Security Agency (NSA) have increased taskings in order to meet emerging requirements from the user community.

For example, as commercial radar capabilities improved and added additional capacity, and through Ukraine Supplemental Funding, NGA was able to utilize NRO's Strategic Commercial Enhancement contracts to increase the use of commercial radar in the Ukraine Area of Interest - valuable data for USEUCOM and Ukraine.

In 2022, NRO's commercial radar providers delivered just over 3,000 images. In 2023, they delivered more than 11,000 images, almost four times as many as the year prior. In 2024, they delivered more than 22,000 images, double the year prior, and through May 25 of this year, they have already delivered more than 12,000 images.

There has also been a marked increase in the use of commercial RF data, which is procured under the end user's authorities, through NRO's contract vehicles, and with NRO's and NSA's approval. NRO and NSA have a Standard Operating Procedure for Commercial RF orders that ensure all parties remain compliant with all statutes, executive orders, and regulations.

Last May, the only commercial RF provider delivering data was HawkEye 360, and they were predominately supporting the Ukraine AOI. Demand for commercial RF increased and HE360 began supporting more missions. In September, Spire Global began delivering data and supporting missions, and this April, Umbra began providing data collected passively on radio frequency interference events. The user base has also increased over the last year from USAFRICOM and USEUCOM to include USCENTCOM, USINDOPACOM, USNORTHCOM, USSOUTHCOM, Army, Coast Guard, Marines, Navy, Space Force and many others.

In May 2024, NRO's commercial radio frequency providers conducted an average of 56 collections a week and delivered an average of 2,840 coarse RF geolocations. In May 2025, they conducted an average of 342 collections a week and delivered an average of 139,140 coarse RF geolocations.

Mr. MOULTON. Dr. Scolese, NRO has a long and proud history of building and operating the NTM constellations, the process of procuring commercially collected data is undoubtable a cultural shift. How has the strategic and philosophical approach

of the NRO changed to reflect Congressional guidance to prioritize commercial data sources?

Dr. SCOLESE. The NRO fully leverages commercial capabilities-including launch services, cloud data services, products and tools, and commercial imagery and data-enabling the NRO to compliment the services and capabilities we acquire from industry partners and only build the government capabilities and systems needed.

In 2018, the responsibility for commercial imagery and data acquisition for the U.S. Department of Defense, Intelligence Community and Federal Civil Agencies transitioned from the National Geospatial-Intelligence Agency to the NRO. At that time, there was one contract for operational electro-optical (EO) imagery.

By the following year, NRO had awarded commercial imagery purchase contracts to BlackSky, HySpecIQ, Maxar, and Planet and two more integration contracts - one to HawkEye 360 for commercial radio frequency (RF) data and one to Capella Space for commercial radar.

Those contracts represented an important milestone in the NRO's strategy of embracing both existing and emerging commercial remote sensing capabilities to create an integrated overhead architecture consisting of both national and commercial capabilities.

In 2022, NRO awarded the Electro-Optical Commercial Layer acquisition, also known as EOCL. EOCL is the largest commercial imagery contract awarded by the IC to three providers - BlackSky, Maxar, and Planet.

Using multiple industry providers, these EOCL contracts have increased commercial capacity, improved revisit rates, and enabled NRO's Overhead Systems to focus collection against the most challenging and sensitive missions. NRO continues to explore new entrants to this remote sensing market including hyperspectral and other phenomenologies through our Strategic Commercial Enhancements (SCE) investments enabling the user community to access and assess commercial data utility to meet requirements.

Currently, NRO's Commercial Systems Program Office (CSPO) has a total of 15 commercial data provider contracts and 12 of those are SCE contracts: 3 Commercial Radar Providers (Capella, ICEYE U.S., & Umbra) 3 Commercial RF Providers (HawkEye 360, Spire & Umbra) 2 Commercial Hyperspectral Imaging (HSI) Providers (Orbital Sidekick & Planet) And 4 Commercial EO providers (Albedo, Hydrosat, Muon Space, & Turion Space)

CSPO's next SCE acquisition will be a multi-phenomenology Commercial Solutions Opening (CSO) - an alternate acquisition approach to the Broad Agency Announcements used previously - to deliver new phenomenologies, emerging capabilities, and evolving commercial technologies at the speed of mission and industry. This CSO will be to explore multi-phenomenologies-EO, HSI, radar, radio frequency, and Light Detection and Ranging (LIDAR).

With a rolling proposal window of 5 years and no set times for responses from Industry, NRO views this CSO as an excellent opportunity to reach a greater number of providers in the commercial market place - to include new and emerging providers and capabilities. NRO plans to release the final Request for Proposal (RFP) in Summer 2025.

One of the biggest paradigm shifts for the NRO was working across unclassified networks and communication channels. Because many NRO commercial providers don't have clearances, SCIFs, etc. we recognized and had to adjust many of our processes and risk postures to better engage uncleared industry partners.

In working with these commercial imagery and data providers, NRO has helped these companies enhance their security infrastructure and ability to more effectively interact with the national security community by developing contract and security mechanisms to facilitate more agile, open, and user-friendly engagement and operations with these providers. As a result, these commercial providers have a better understanding of how their services and products can better meet national security requirements and where they can build future capabilities that can meet our current and future needs.

Mr. MOULTON. VADM Whitworth, during your testimony you repeatedly referred to commercial as a "gap-filler". This does not align with Congressional intent, as outlined in multiple NDAA's. As commercial capability has dramatically improved over the last 5 years, what process does NGA use to determine if commercial can take over specific collections from NTM? How often does this evaluation take place?

Admiral WHITWORTH. When I said commercial imagery is so agile that it can fill gaps, I intended to convey that commercial capabilities are critical elements of a GEOINT architecture which also includes National Technical Means (NTM) and the DOD proliferated architecture. They are a first choice for many missions and provide us with the agility to task them for rapidly emerging situations and for some missions where NTM would not be appropriate.

For instance, commercial imagery satisfies more than 98 percent of the imagery collection requirements for NGA's statutory Foundation and Safety of Navigation production. We also rely upon commercial imagery to meet many intelligence collection requirements, as well as to provide unclassified, shareable imagery for Humanitarian and Disaster Relief missions.

Regarding the ability for commercial to take over specific collections from NTM, NGA's collection orchestration process is built to meet DOD, IC, and other user needs for imagery as quickly as possible by assigning collection requirements to any system that is capable of meeting those needs, regardless of whether it is an NTM, commercial, or DOD system. This is more effective than assigning specific collections to either commercial platforms or NTM systems because doing so would result in delays for many users while they await a specific system to become available.

As commercial capabilities improve, the collection orchestration process takes into account their ability to satisfy more challenging collection requirements and tasks them when they are the most effective means of meeting user collection needs.

Mr. MOULTON. We continue to hear and see a clear cultural resistance within NGA to treating commercial providers as true mission partners, which has negative operational effects. What are you doing to break that mindset and change the culture?

Admiral WHITWORTH. I would appreciate the opportunity to meet to learn more about what you are hearing and seeing that suggest cultural resistance at NGA to embracing commercial providers as mission partners.

I have heard similar assertions in the past, but I do not believe there to be a cultural bias against commercial providers at NGA. NGA is a leader in applying commercial imagery, commercial data, and commercial analytic capabilities to support military operations and humanitarian and disaster relief efforts around the world. Each and every day, we leverage a complex and diverse constellation of US national, commercial and foreign sensors to meet prioritized requirements. To ensure that we maintain the highest level of focus on commercial GEOINT capabilities, I elevated the agency's Commercial Operations Group to serve as my direct report in 2024.

Mr. MOULTON. How are analysts being trained to prioritize commercial data when it meets the requirement, rather than defaulting to NTM out of habit or preference? What accountability measures have you put in place to ensure analysts do so in practice?

Admiral WHITWORTH. NGA collection strategy analysts undergo a formal training and certification process which includes instruction on commercial GEOINT systems and the incorporation of commercial imagery in collection plans. To further prevent defaulting to NTM out of habit or preference, NGA's primary tasking tool, the GEOINT Information Management Services (GIMS), defaults to sensoragnostic tasking submissions that include commercial capabilities.

The primary accountability measure for our civilian workforce is the performance review process. Performance reviews of collection strategy analysts, which include quarterly feedback sessions, evaluate their ability to satisfy customer requirements with available GEOINT sources, including commercial sources of GEOINT, at the lowest classification level.

Finally, NGA continually educates intelligence analysts on emerging national and commercial GEOINT capabilities. This includes a robust commercial imagery outreach program with Combatant Commands, Service Intelligence Centers, and external agencies that provides analysts technical training on emerging commercial imaging capabilities, analytics, services, and data.

Mr. MOULTON. How many dynamic collection opportunities have we missed because NTM is unavailable due to routine, standing requirements that commercial could easily satisfy? What data does NGA have to assess that tradeoff? How often is that analysis reviewed at the senior level?

Admiral WHITWORTH. No dynamic collection opportunities are missed for that reason. In fact, dynamic collection requirements are always prioritized to ensure they are not outcompeted by standing collection requirements. They will be satisfied by the first collection opportunity available with a system capable of meeting the requirement, whether that system is commercial or National Technical Means.

NGA recently provided the committee with a congressionally directed report on the satisfaction of collection requirements which contains additional data at the classified level to further address your question. NGA continually monitors collection orchestration activities, including the balance of collection across NTM and commercial systems. I review this report daily at NGA's operational standup meeting.

RESPONSE TO QUESTIONS SUBMITTED BY MR. CARBAJAL

Mr. CARBAJAL. Gen. Purdy, as someone who has worked across systems engineering, research and development, and program management of major defense acquisition programs, you surely understand the tension between rigorous mission assurance requirements and the need for speed and innovation. As you well know, mission assurance is non-negotiable in national security space programs. The stakes are high and every launch, every satellite, every system must function flawlessly to support critical missions such as missile warning, ISR, communications, and space domain awareness. Many in the defense and intelligence communities have raised concerns that overly rigid requirements are creating barriers for new entrants, limiting access to commercial innovation, and slowing down our ability to field capabilities at the speed of relevance. However, we appreciate that you've introduced tiered mission assurance into Lane 1 of the National Security Space Launch Program, and think this could be replicated across other launch contract mechanisms like SRP-4 and OSP-4. Gen. Purdy, how do you plan to balance the need for maintaining mission assurance while ensuring that the Space Force is agile enough to take full advantage of commercial space capabilities? Are there specific reforms or initiatives you believe could help streamline the mission assurance process, reduce bureaucracy, and accelerate capability fielding while still maintaining the high standards required for national security space programs?

Gen Purdy, what is the Space Force's long term plan for TacSRT? Will it be submitted as a Program of Record? (If no, why not?)

General PURDY. Historically, the risk tolerance for National Security Space Launch (NSSL) was low, driven by a strong focus on government oversight to ensure mission success based on lack of a robust commercial launch market and a string of catastrophic launch failures in the late 1990s. However, the commercial industry is experiencing unprecedented growth because of lower launch costs, driven by significant advancements and increased competition in the commercial rocket market. The U.S. Space Force (USSF) has modernized our acquisition strategies and mission assurance (MA) processes to take advantage of commercial innovation in the launch industry.

The USSF's Assured Access to Space (AATS) enterprise uses multiple acquisition strategies and contracts to address the varying degrees of risk tolerance across missions and take advantage of emerging commercial innovations and launch providers. NSSL Phase 3's dual-lane approach provides the flexibility to adjust risk posture based on specific mission needs, balancing the effective use of resources and leveraging launch industry innovation. Lane 2 follows the traditional NSSL model serving "no fail" missions, with low-risk tolerance processes and rigorous MA. Lane 1 embraces the growing commercial market, with annual on-ramping, no requirement for formal NSSL certification, and tiered MA to match the payload's risk tolerance. The Lane 1 contract uses a four-tier MA approach to provide a spectrum of government oversight and scrutiny, enabling flexibility to throttle MA based on payload risk posture. Tier 0 is the most risk-tolerant option, leveraging commercial processes and FAA licensing without additional government MA; NSSL awarded nine Tier 0 missions in October 2024.

The Rocket Systems Launch Program (RSLP) complements the NSSL program and provides access to small launch companies to launch small, experimental, and/or prototype payloads. RSLP also provides tiered MA commensurate to the customer's risk posture/tolerance and launch vehicle maturity on their OSP-4 (orbital launch) and SRP-4 (suborbital launch) contracts. In fact, the tiered MA concept was first implemented on the RSLP contract vehicles. The success of the tiered MA framework on OSP-4 and SRP-4 informed the NSSL Phase 3 acquisition strategy.

AATS continues to modernize and refine tailored MA based on higher launch cadence, reusable flight hardware, data automation, and other tools to ensure effective and efficient use of government resources and significantly increase the speed of launch. Space launch, while becoming more commonplace, remains an extremely complex endeavor. We are evaluating the initial success of the Lane 1 approach, new entrant maturity, and the trade between speed and risk in the context of emerging threats and then applying any lessons learned to new or modified acquisition strategies and MA approaches to increase responsiveness and accelerate capability fielding.

The recent signing of the National Geospatial-Intelligence Agency - U.S. Space Force Memorandum of Agreement (MOA) on May 21, 2025, is a key enabler, formalizing interagency collaboration and data sharing to enhance support to the warfighter. This MOA will be used to determine the long-term plan for TacSRT.

Mr. CARBAJAL. Dr. Scolese, given the emphasis on leveraging commercial innovations, what steps have you taken in recent budget cycles to move funding from tradi-

tional, government-owned platforms to commercial alternatives? Specifically, can you outline any recent reallocation of resources towards commercial capabilities, and away from legacy systems? How do these shifts align with the IC's overall modernization strategy?

Dr. SCOLESE. The NRO continuously monitors the commercial market for expanding opportunities to participate in National Security collection. As industry demonstrates capability to meet government requirements, we roll them into the baseline to allow national systems to focus on the more challenging problems of requiring unique capabilities, exquisite collection, sensitive operations, or time critical tasking.

From a commercial remote sensing perspective, NRO's Electro-Optical Commercial Layer (EOCL) program was specifically designed to identify imagery requirements being performed by NRO overhead Systems that could be met with commercial remote sensing capabilities.

In 2022, NRO awarded the Electro-Optical Commercial Layer acquisition, also known as EOCL. EOCL is the largest commercial imagery contract awarded by the IC to three providers - BlackSky, Maxar, and Planet.

Using multiple industry providers, these EOCL contracts have increased commercial capacity, improved revisit rates, and enabled NRO's Overhead Systems to focus collection against the most challenging and sensitive missions.

Mr. CARBAJAL. VADM Whitworth, the last several supplemental appropriations bills for both Ukraine and Israel have included significant funding for commercial capabilities for combatant commands. If you are meeting the needs of the Department, why have we seen consistent requests for commercial space solutions from commanders for needs that are not being met? How does the NGA view its role in helping U.S. commercial remote sensing companies scale and succeed-not just as vendors, but as critical components of national defense infrastructure?

Admiral WHITWORTH. NGA maximizes the existing GEOINT collection architecture to ensure the highest priority combatant command requirements are met. Although multiple studies over the past year have found our tasking processes are effective, we simply do not have enough GEOINT collection capacity available to meet every requirement. Planned growth in GEOINT collection over the next few years will help improve our ability to meet requests, as can commercially-provided GEOINT analytic data and services. NGA recently provided the committee with a copy of our study on satisfaction of collection requirements that contains additional data at the classified level that further addresses your question.

NGA's role in helping commercial remote sensing companies scale and succeed is centered on our mission as a Combat Support Agency with deep GEOINT expertise. NGA leverages all usable commercial imagery purchased by NRO, and routinely communicates with commercial vendors about mission needs.

NGA also leverages our expertise by offering companies and NRO valuable insight into mission-user needs that will improve the value of their capabilities to the government and other users.

RESPONSE TO QUESTIONS SUBMITTED BY MR. BACON

Mr. BACON. The space-based Ground Moving Target Indicator mission is intended to replace and expand the mission of the JSTARS for the warfighter. Why does the NGA believe that the tasking for this system should reside with your agency, instead of by the service? When will a decision on the final tasking authority be made?

General PURDY. The tasking authority for the Ground Moving Target Indicator program resides within the Combatant Commands. We will continue to collaborate with the National Geospatial-Intelligence Agency, including leveraging their expertise and investments.

Mr. BACON. Recently, you issued warnings at the SSIB conference in New Mexico to both the government and industry. You warned the government to think deeply about requirements, cost, time, and money. You further urged the government to have the wisdom to take risks and move things out to the commercial sector when it makes sense. You told industry to review what it's doing and what it's offering to the government, and figure out how it plugs in instead of just wholesale replacing whatever the government has in its inventory.

Focusing on the industry aspect, the Space Force's approach today appears to be one of exploit, build, and buy. Shouldn't the sequence be exploit, build, further develop (with government funding), and then buy?

Why is space so different from programs like KC-130 and F-47? If the DoD likes what a company is developing with its own or investor funds, it should consider buy-

ing it. DoD funds, adapted for commercial purposes, allow DoD to purchase the requisite.

General PURDY. At the SSIB conference, I emphasized that outpacing accelerating threats requires a cultural shift in how government and industry think, communicate, and build together. The U.S. Space Force prioritizes an “exploit, buy, build” sequence, with building as a last resort. This means first seeking to exploit existing assets in new ways, then buying commercially available data or capabilities if they adequately meet mission needs, and then only building unique government solutions when necessary. This approach informs how we define and validate requirements, incentivizing smart trade-offs and avoiding “gold plating.” Industry must focus on operationally relevant, cost-effective, and integrable solutions that can augment existing capabilities. This demands greater transparency and partnership, with government open to calculated risks and commercial solutions, and industry proactively shaping realistic, interoperable, and mission-driven offerings. Success hinges not on perfection, but on quickly and affordably building the right system in partnership, leveraging commercial options whenever possible.

The U.S. Space Force is prioritizing commercial-first solutions in many mission areas and programs, including Space Domain Awareness and Tactically Responsive Space, while the Commercial Space Office expands commercial integration into areas like Space-Based Environmental Monitoring. Acquisition programs are directed to identify where commercial offerings can meet requirements, with Acquisition Decision Memoranda promoting alternatives to traditional programs, which insert in competition and speed while acknowledging that there are certain “no-fail” missions that will likely remain government-led to mitigate national security risks. The U.S. Space Force aims to maintain its strategic advantage by leveraging commercial innovation and adjust its budget priorities, acquisition strategies, and culture to welcome commercial capabilities, ultimately buying speed, resilience, and strategic surprise to maintain space superiority.

Mr. BACON. The 557th Weather Wing at Offutt Air Force Base in Nebraska plays a critical role in supporting DoD’s global operations with timely and accurate weather forecasting. However, the Department continues to rely on aging, retired NOAA satellites, with no defined acquisition path for replacement capabilities, either commercial or organic to the DoD. Given that most of this weather data originates from space-based platforms, what is the Department’s strategy to ensure continuity and modernization of this capability, to include commercial capabilities?

General PURDY. Following direction from Congress in FY2020, the U.S. Space Force (USSF) developed a weather strategy that shifted from using legacy satellites to proliferated architectures while continuing a holistic approach of non-materiel solutions and partnerships, which remains on track. Today, the USSF is focused on first leveraging our partners’ data, then transitioning towards a commercial Data-as-a-Service model for delivering capabilities faster and more efficiently, and finally pursuing a USSF materiel-provided solution only as necessary to fill critical warfighter capability needs.

Additionally, the USSF is ensuring continuity and modernization of environmental monitoring capabilities through an ongoing and iterative collaborative process across the USSF, Air Force, Navy, NOAA, NASA, and other key organizations. The USSF will continue to modernize weather satellites and provide accurate weather forecasting with this integrated strategy in place.

Mr. BACON. The space-based Ground Moving Target Indicator mission is intended to replace and expand the mission of the JSTARS for the warfighter. Why does the NGA believe that the tasking for this system should reside with your agency, instead of by the service? When will a decision on the final tasking authority be made?

Admiral WHITWORTH. NGA does not believe that we should be solely responsible for tasking of the Ground Moving Target Indicator mission.

However, the evolution to a GMTI constellation with global access will produce the greatest capability if we enhance coordination across combatant commands and agencies while integrating overhead collection management activities.

That is why we joined with U.S. Space Force, DIA, and other agencies and departments to establish the Joint Mission Management Center (JMMC). This center will bring together collection management tools and centuries of informed collection orchestration expertise to support the final tasking authority for space based-GMTI in their efforts to maximize their ability to meet combatant command requirements.

NGA defers to USD(I&S) regarding when a decision will be made on the final tasking authority for space-based GMTI.

Mr. BACON. NGA, in partnership with CDAO, is successfully fielding commercial capabilities including the Maven Smart System to rapidly and effectively meet the Combatant Commands’ GEOINT and targeting requirements. EUCOM and

INDOPACOM are using it to access a common operating picture. However, there are still large gaps in who has it and on what networks. What is the plan to continue scaling it to ensure all warfighters at every Combatant Command have this joint warfighting software?

Admiral WHITWORTH. As CDAO is responsible for procuring Maven Smart System (MSS) licenses for the combatant commands, their subordinate components and major sub unified commands, I defer to them to address your question about scaling MSS to more warfighters around the world.

Mr. BACON. I am pleased to hear that the administration is acknowledging what many members of this committee have known for years: that space is a warfighting domain. Our adversaries have made it so, and the US must act to protect its interests in space. How does the department plan to change policy to ensure that our adversaries are deterred, and more importantly, that our space forces are able to defeat these threats if required? In particular, how will policies change to enable the on-orbit testing required to validate that these systems work and demonstrate their effectiveness to our adversaries? How will policies change to enable the required training so that our operators have the opportunities they need to master their weapon systems?

Ms. YAFFE. The Department is committed to protecting U.S. interests in space. To advance deterrence, we are working to assure the ability to accomplish critical national security missions that rely on space services. We are also implementing a balanced, combat credible force structure that includes capabilities for offensive and defensive space control missions to ensure that the Nation has options to deliver desired effects that protect and advance our priority policy objectives. On testing and training, we continue to work with the Military Departments and Services and our operators to make sure the Department's policies enable them to conduct their missions. As part of our effort to normalize space operations within the Department, we believe it is important that our Guardians can test and train to advance capabilities, concepts of operation, and readiness, just like every other service in every other domain. We are working hard to continue to standardize processes to enable necessary forward progress while ensuring that we work to preserve and advance our operational advantages. These efforts are complemented by implementation of the Department's space classification guidance, issued in December 2023, through which we seek to improve information sharing within the DoD to the benefit of trainers, planners, and operators.

RESPONSE TO QUESTIONS SUBMITTED BY MR. MESSMER

Mr. MESSMER. How does the Space Development Agency's (SDA) Transport Layer uniquely enable joint force operations and Joint All-Domain Command and Control (JADC2)?

General PURDY. The Space Development Agency (SDA) Transport Layer would enhance joint operations and JADC2 by providing extended, low-latency communication and acting as a provisioner of space-based Link-16, which is vital for interoperability across the Services. Furthermore, it offers essential data backhaul capabilities for the SDA Tracking Layer and Global Navigation Satellite System interference detection, addressing key challenges related to connectivity, persistence, and resilience. The ability to meet the U.S. Space Force's (USSF) "fight tonight" requirements is paramount during this period.

Mr. MESSMER. Can you ensure that Space Development Agency's (SDA) Tranche 2 Transport Layer will be protected within the Department's 2026 budget and how are you going to ensure we don't put billions of dollars already invested by government and industry at risk?

General PURDY. The U.S. Space Force recognizes that the capabilities being developed by the Space Development Agency's (SDA) Transport Layer are currently required to support SDA's Tracking Layer. To meet Joint All Domain Command and Control (JADC2) requirements, a resilient and persistent space-based data transport layer is critical, and the capabilities delivered in Tranche 2 will support near-term needs. We are committed to being responsive to changing warfighter demand signals, budget realities, analytical conclusions, and government acquisition rules as we acquire the capabilities that provide the best value to the Joint Force.

Mr. MESSMER. My district includes NSWC Crane who has been one of the Department of Defense's (DoD) innovators in the use of Other Transactional Authority (OTA's) with their S2MARTS consortium OT. Does your organization have a similar OT in its arsenal and how do they intend to expand their use of OT's consistent with President Trump's Executive Order of April 9, 2025, regarding acquisition reform within the department?

General PURDY. OTs are an important part of our contracting arsenal that we are increasingly using across the space portfolio to add speed to acquisitions and rapidly put capabilities in the hands of our warfighters. The new authorities granted by Congress, which allow the Senior Procurement Executives to approve larger awards, is extremely advantageous for moving faster, which is especially important given the size and complexity of space efforts. Currently, we are using a number of consortium OT contracts managed by various Services to increase the speed of acquisitions, including the Space Enterprise Consortium OT managed by Space Systems Command, which streamlines collaboration with non-traditional organizations such as commercial space startups and small businesses by using OTAs to rapidly develop prototypes. Additionally, we challenge our Program Managers to utilize the right mix of incentives, contract vehicles, and risk posture to deliver warfighting capability with speed and discipline.

Mr. MESSMER. What benchmarks should Congress look for to assess whether commercial-first geospatial acquisition and procurement solutions are being prioritized in execution by your organization?

Dr. SCOLESE. NRO's Commercial Enhancements (SCE) program is the first of its kind in the national security community to explore and leverage new entrants and emerging capabilities in the commercial remote sensing market. The SCE program offers the DoD and IC user community an excellent opportunity to access and assess new entrant commercial imagery and data providers to see if their products meet requirements, and if yes, can on-ramp and accelerate vendors to provide products.

Currently, NRO's Commercial Systems Program Office (CSPO) has a total of 12 SCE commercial data provider contracts: ? 3 Commercial Radar Providers (Capella, ICEYE U.S., & Umbra) ? 3 Commercial Radio Frequency (RF) Providers (HawkEye 360, Spire & Umbra) ? 2 Commercial Hyperspectral Imaging (HSI) Providers (Orbital Sidekick & Planet) ? And 4 Commercial Electro-Optical (EO) providers (Albedo, Hydrosat, Muon Space, & Turion Space)

NRO's next SCE acquisition will be a multi-phenomenology Commercial Solutions Opening (CSO) - an alternate acquisition approach to the Broad Agency Announcements used previously - to deliver new phenomenologies, emerging capabilities, and evolving commercial technologies at the speed of mission and industry. This CSO will be to explore multi-phenomenologies: EO, HSI, radar, radio frequency, and Light Detection and Ranging (LIDAR).

With a rolling proposal window of 5 years and no set times for responses from Industry, NRO views this as an excellent opportunity to reach a greater number of providers in the commercial market place - to include new and emerging providers and capabilities. NRO hopes to have the final Request for Proposal out this summer and look forward to seeing what industry has to offer. And how we can leverage those capabilities for our national security mission.

Mr. MESSMER. The National Geospatial-Intelligence Agency (NGA) has conducted significant geospatial intelligence collection in the CENTCOM Area of Responsibility (AOR) over the past two years to assist Israel. How have you seen Iran's missile defense capabilities impacted by Israeli airstrikes, and since the latter months of 2024, how have you seen Iranian bases adapt or rebuild?

Admiral WHITWORTH. A classified response to this question for record has been provided to the subcommittee via secure means.

Mr. MESSMER. What benchmarks should Congress look for to assess whether commercial-first geospatial acquisition and procurement solutions are being prioritized in execution by your organization?

Admiral WHITWORTH. NGA prioritizes commercial-first acquisition and procurement solutions when they meet requirements and demand. With regard to commercial imagery, this is an interagency process. NRO is responsible for funding, acquisition, and execution of contracts for commercial imagery. NGA is responsible for coordinating and tasking requests for imagery from the IC and DoD. We maximize the use of the commercial imagery procured by NRO that meets stated requirements - at the same time, we will not use imagery that fails to meet resolution, geolocation, or other quality standards. NGA and NRO work with commercial imagery providers on engineering enhancements that will improve their ability to deliver capabilities that meet US government needs.

When it comes to commercial GEOINT analytics, it is best to assess trends in our purchases to assess whether we are evaluating newly available commercial capabilities and then investing in those that meet IC and DOD needs. Since 2020, NGA has seen significant improvements in commercial analytic capabilities as well as growing community demand for those capabilities. Accordingly, NGA has invested in an increasingly diverse and capable set of commercial capabilities since that time, and we have established contracting mechanisms to continue to do so. In 2024 and

2025, we awarded the Luno A and B contracts for commercial services - valued at up to \$490 million.

Mr. MESSMER. How is the Department of Defense working to build cyber resilience into satellite command and control systems as threats continue to evolve, particularly as they relate to the serial networks within these Satellite Control Networks (SCN)?

Ms. YAFFE. The Department recognizes that space systems, as with any networked capability, must harden attack surfaces to reduce exploitable vectors for attack on all segments of the space systems - ground, link, communications, user, and on-orbit. Appropriate cryptography, secure supply chains, a risk management framework that is threat-informed, and intent to design a system that is resilient to both current and future cyber threats is necessary to adapt to the dynamic cyber threat environment. The Office of the Assistant Secretary of Defense for Space Policy works closely with the Office of the Assistant Secretary of Defense for Cyber Policy to address the convergence of the space, cyber, and electronic warfare domains.

RESPONSE TO QUESTIONS SUBMITTED BY MR. CRANK

Mr. CRANK. In its recently released Space Warfighting: A Framework for Planners, the USSF notes that "The concept of movement and maneuver in the space domain includes rapid and sustained maneuver; moving satellites into different Earth orbits; changing a spacecraft's location between lunar and geostationary orbits; changing trajectory within cislunar space; (...) and dispersing space capabilities and services across space architectures and other domains, while being able to focus military effects when and where needed." Maj. Gen. Purdy and Ms. Yaffe: Given the importance of In-Space Mobility and Logistics especially as China demonstrates mobility in space, what is the policy impact and what are the plans to invest in and acquire commercial capabilities for in-orbit logistics and maneuver?

General PURDY. The U.S. Space Force (USSF), using the Department of Defense Commercial Space Integration Strategy and the USSF Commercial Space Strategy as guidance, has funded several commercial demonstrations to explore solutions for sustained space maneuver that will launch within the next couple of years and allow the USSF to learn about the maturity of the technology and the industrial base, assess military utility, and inform future concepts of operation, tactics, techniques, and procedures, Service-level requirements, and objective force design.

Enhanced Maneuver (Refueling) Demonstration 1: In 2023, USSF awarded a contract to develop a refueling shuttle that, coupled with Defense Innovation Unit's Orbit Fab propellant depot and Tetra-5 satellites, will demonstrate a scalable commercial refueling architecture. These satellites are planned for launch in 2026.

Enhanced Maneuver (Refueling) Demonstration 2: The ROOSTER-5 satellite will host multiple commercial refueling payloads to refuel satellites. ROOSTER-5 is planned for launch in 2027.

Augmented Maneuver Service: In 2024, USSF awarded a contract to develop on-orbit operations of "GRIM" (Geostationary Repositioning, Inspection, and Mobility) as part of SpaceWERX's strategic finance or STRATFI program. The GRIM satellite is capable of orbital transfer, disposal, and station keeping, which is an important step towards sustained space maneuver for satellites that do not have a refueling port. GRIM also provides resiliency by extending the life of satellites that experienced an anomaly or need to extend beyond their design life to close operational gaps, as well as demonstrate sustainable space behavior through disposal. This satellite is planned for launch in 2026.

Mr. CRANK. Gen Purdy, many in the defense and intelligence communities have raised concerns that overly rigid requirements are creating barriers for new entrants, limiting access to commercial innovation, and slowing down our ability to field capabilities at the speed of relevance. However, I appreciate that you've introduced tiered mission assurance into Lane 1 of the National Security Space Launch Program, and think this could be replicated across other launch contract mechanisms like SRP-4 and OSP-4.

Gen. Purdy, how do you plan to balance the need for maintaining mission assurance while ensuring that the Space Force is agile enough to take full advantage of commercial space capabilities? Are there specific reforms or initiatives you believe could help streamline the mission assurance process, reduce bureaucracy, and accelerate capability fielding while still maintaining the high standards required for national security space programs?

General PURDY. Historically, the risk tolerance for National Security Space Launch (NSSL) was low, driven by a strong focus on government oversight to ensure mission success based on lack of a robust commercial launch market and a string

of catastrophic launch failures in the late 1990s. However, the commercial industry is experiencing unprecedented growth because of lower launch costs, driven by significant advancements and increased competition in the commercial rocket market. The U.S. Space Force (USSF) has modernized our acquisition strategies and mission assurance (MA) processes to take advantage of commercial innovation in the launch industry.

The USSF's Assured Access to Space (AATS) enterprise uses multiple acquisition strategies and contracts to address the varying degrees of risk tolerance across missions and take advantage of emerging commercial innovations and launch providers. NSSL Phase 3's dual-lane approach provides the flexibility to adjust risk posture based on specific mission needs, balancing the effective use of resources and leveraging launch industry innovation. Lane 2 follows the traditional NSSL model serving "no fail" missions, with low-risk tolerance processes and rigorous MA. Lane 1 embraces the growing commercial market, with annual on-ramping, no requirement for formal NSSL certification, and tiered MA to match the payload's risk tolerance. The Lane 1 contract uses a four-tier MA approach to provide a spectrum of government oversight and scrutiny, enabling flexibility to throttle MA based on payload risk posture. Tier 0 is the most risk-tolerant option, leveraging commercial processes and FAA licensing without additional government MA; NSSL awarded nine Tier 0 missions in October 2024.

The Rocket Systems Launch Program (RSLP) complements the NSSL program and provides access to small launch companies to launch small, experimental, and/or prototype payloads.

RSLP also provides tiered MA commensurate to the customer's risk posture/tolerance and launch vehicle maturity on their OSP-4 (orbital launch) and SRP-4 (sub-orbital launch) contracts. In fact, the tiered MA concept was first implemented on the RSLP contract vehicles. The success of the tiered MA framework on OSP-4 and SRP-4 informed the NSSL Phase 3 acquisition strategy.

AATS continues to modernize and refine tailored MA based on higher launch cadence, reusable flight hardware, data automation, and other tools to ensure effective and efficient use of government resources and significantly increase the speed of launch. Space launch, while becoming more commonplace, remains an extremely complex endeavor. We are evaluating the initial success of the Lane 1 approach, new entrant maturity, and the trade between speed and risk in the context of emerging threats and then applying any lessons learned to new or modified acquisition strategies and MA approaches to increase responsiveness and accelerate capability fielding.

Mr. CRANK. Orbital Diversity has been identified as an effective holistic strategy to reduce vulnerabilities in our national space systems. For our exquisite ISR systems, are you exploring whether VLEO effectively applies this principle to maximize the continuity of collection in potential future conflicts? As you develop future architectures, is VLEO being considered as an avenue to proliferate for resiliency without compromising capability?

Dr. SCOLESE. NRO recognizes the importance of orbital diversity as a key strategy for reducing vulnerabilities in our national space systems. While we currently implement orbital diversity across our constellation, Very Low Earth Orbit (VLEO) is not under active consideration at this time. However, as we continue to evolve our architectures and explore new technologies, we will evaluate VLEO's potential benefits for resilience and collection continuity in future conflicts. Our focus remains on developing diverse, resilient architectures that can maintain critical ISR capabilities across a range of scenarios.

Mr. CRANK. In its recently released Space Warfighting: A Framework for Planners, the USSF notes that "The concept of movement and maneuver in the space domain includes rapid and sustained maneuver; moving satellites into different Earth orbits; changing a spacecraft's location between lunar and geostationary orbits; changing trajectory within cislunar space; (...) and dispersing space capabilities and services across space architectures and other domains, while being able to focus military effects when and where needed." Maj. Gen. Purdy and Ms. Yaffe: Given the importance of In-Space Mobility and Logistics especially as China demonstrates mobility in space, what is the policy impact and what are the plans to invest in and acquire commercial capabilities for in-orbit logistics and maneuver?

Ms. YAFFE. There are no DoD policy barriers to pursuing in-space mobility and logistics capabilities and services. The DoD Commercial Space Integration Strategy (CSIS) states the Department will seek to integrate commercial solutions for all mission areas where solutions can enhance resilience and add capability without imposing unacceptable risk, while also maintaining U.S. government responsibility for certain critical national security functions. Space Access, Mobility, and Logistics (SAML) was identified as a "commercial primary mission area" in the CSIS, or one

in which a preponderance of functions within this mission area could be performed by the commercial sector, while a limited number of functions must be performed by the government.

The Department has funded several commercial demonstrations to explore solutions for sustained space maneuver that will fly in the next couple of years. These missions will allow the Department to learn about the maturity of the technology and the industrial base, assess military utility, and inform future Service requirements and force design.

