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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: FY25 Space Budget Hearing
STATEMENT OF: Honorable Frank Calvelli,
Assistant Secretary of the Air Force for Space Acquisition and Integration

May 1, 2024

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OVERVIEW

Chairman Lamborn, Ranking Member Moulton, and distinguished members of the Committee, thank you for inviting me to testify before you today.

We continue to face an unprecedented strategic competitor in China, and our space environment continues to become more contested, congested, and competitive. We have seen exponential growth of in-space activity, including counterspace threats, and our adversaries would seek to deny us the advantage we get from space during a potential conflict.

To counter these threats, we continue to drive resiliency and transform our space architecture through proliferation, orbit diversification, disaggregation, utilization of commercial capabilities, cyber hardening, and collaboration with Allies and partners. Furthermore, my top initiative remains to drive **speed** into our space acquisitions and deliver programs on cost and schedule. The threat environment demands we deliver capabilities fast enough to detect threatening behavior in space, deny adversary advantage, deter aggressive actions, and, if necessary, defeat adversaries during a conflict.

Today I want to talk to you about how we are transforming the space architecture, the near-term capabilities we are delivering, the remaining challenges, and how I am managing the space acquisition enterprise to drive change and get after the threat with speed.

CONTINUING TO TRANSFORM THE SPACE ARCHITECTURE

The Space Force continues to pivot to a proliferated and resilient **missile warning and missile tracking** (MW/MT) architecture in low Earth orbit (LEO) and medium Earth orbit that focuses on tracking advanced threats by integrating critical missile tracking capabilities that previously did not exist. As we develop and deliver this new capability, we are also developing the Next Generation Overhead Persistent Infrared (OPIR) program, comprised of the Next Generation OPIR Geosynchronous (Next Gen GEO) and Next Gen OPIR Polar missile warning systems, as a bridge to enable the eventual transition to the resilient MW/MT architecture.

We continue to transform our **military satellite communications** (SATCOM) by disaggregating our strategic and tactical satellite architectures and leveraging new proliferated LEO capabilities. This approach adds resiliency and ensures our systems can operate through contested and degraded environments.

In collaboration with the National Reconnaissance Office (NRO), we are developing a **ground moving target indicator** (GMTI) solution to meet Combatant Command requirements. This capability will provide actionable information on adversary surface targets that the Space Force will deliver to the Joint Force. We selected this partnership with the NRO because their concept allows us to go **faster**, with **less technical risk**, and at **lower cost**. Again, acquisition speed is a top factor in our decision-making, and the partnership with the NRO allows us to develop space-based GMTI faster. Milestone B for this program will take place later this year.

Maintaining constant awareness of the battlespace, supplemented by the capability to accurately produce indications and warnings for malign behavior, is critical to the Space Force avoiding

operational surprise. To that end, our **space domain awareness** architecture leverages partnerships and data across the national security space enterprise and commercial sources to ensure we have a resilient, integrated, and diverse sensor architecture. We continue to invest in SILENTBARKER and the Deep Space Advanced Radar Capability (DARC).

The DARC program exemplifies international collaboration within the trilateral partnership agreement between the United States, the United Kingdom, and Australia, known as AUKUS. Earlier this year, we broke ground on DARC Site 1 at Harold E. Holt Naval Station, Australia. DARC extends the Space Force's umbrella of awareness in the space domain by establishing a clear picture of the operating environment and denying adversaries the ability to strike U.S. assets without warning. This summer, the DARC Site 2 design contract will be awarded for the planned United Kingdom location.

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 ensuring **space superiority**.

Maintaining assured access to space is vital to delivering capabilities to orbit when needed. With the growing launch demand and number of emerging launch providers, we designed the **National Security Space Launch (NSSL) Phase 3** strategy to pursue, for the first time, a dual-lane hybrid contracting approach to maximize access to commercial launch partners.

Lane 1 in NSSL Phase 3 allows an unlimited number of launch service providers to compete for our less complex missions that have higher risk tolerance. Lane 1 enables us to tap into new technologies as emerging providers and capabilities are ready. Lane 2 maintains our full mission assurance posture to support our toughest missions. While Lane 2 closely mirrors the current procurement approach in NSSL Phase 2, we added a third launch provider to promote the necessary resiliency in launching our most challenging and critical payloads.

DELIVERING CAPABILITY

In February 2024, the Space Force's Space Development Agency (SDA), in partnership with the Missile Defense Agency (MDA), successfully launched the final four **Tranche 0 Tracking Layer** satellites of the Proliferated Warfighter Space Architecture (PWSA) together with MDA's two Hypersonic and Ballistic Tracking Space Sensor satellites. This collaboration will enable simultaneous testing of SDA's MW/MT sensors with MDA's fire control sensors on the same exercise targets, from the same orbit, and deliver the quality data required to analyze and defeat advanced missile threats. Furthermore, this launch marked the final delivery of SDA's Tranche 0 constellation, culminating 27 total satellites delivered to orbit in nearly three years from contract award.

Later this year, SDA will start delivering roughly 160 **Tranche 1** satellites over 10 launches in 11 months. SDA's vendors are currently building all Tranche 1 satellites and the accompanying

ground infrastructure, including two new network operations centers that are on track for delivery later this year.

Not only are we demonstrating our ability to develop and proliferate with speed, but we are also introducing non-traditional prime vendors in **Tranche 2**. Incorporating new industry partners enhances our resiliency and increases our advantage against strategic competitors. These new vendors also demonstrate an encouraging industrial base response to our spiral development model of competing new tranches every two years.

We also kicked off this year with the successful first certification flight of United Launch Alliance's (ULA) **Vulcan Centaur launch vehicle**. This marks an important milestone on our path toward ending U.S. reliance on the Russian-made RD-180 engines that are used on Atlas V launch vehicles. The last Department of Defense (DoD) Atlas V launch is scheduled for this fall.

Fiscal Year (FY) 2024 marked the final order year of **NSSL Phase 2** and supports launches through 2027. We will award our **NSSL Phase 3** contracts this year for launch service orders beginning in FY25.

This April, Space Systems Command launched the first **Weather System Follow-on Microwave (WSF-M)** satellite. WSF-M is designed to replace the critical microwave capabilities of our legacy Defense Meteorological Satellite Program satellites which will reach end of life in 2026. WSF-M is equipped with a microwave imager to collect weather data such as ocean surface vector winds and tropical cyclone intensity, as well as snow depth, soil moisture, and sea ice characterization. This launch marks a critical step towards improving the collection of weather data in support of warfighter requirements.

In the same month, the **Evolved Strategic SATCOM (ESS)** program released its request for proposals (RFP) for the constellation's initial four satellites. ESS is the future backbone for Joint All-Domain Nuclear Command, Control, and Communications, and will replace Advanced Extremely High Frequency system services to provide global, integrated, survivable, resilient, and dynamic ground and satellite communications for assured strategic endurance. Contract award is targeted in FY25 to achieve Initial Operational Capability (IOC) by 2032.

We continue our commitment to provide highly accurate timing, three-dimensional positioning, and navigation information, in any weather, to an unlimited number of military and civilian users, anywhere on or above the surface of the Earth. In FY25, we are procuring two additional **Global Positioning System (GPS) III F** vehicles. Currently, there are 31 GPS satellites in operation, and another four in storage. Simultaneously, we are researching additional resilient positioning, navigation, and timing options, which may become a transformational effort in the future.

Another critical capability launching this year is **Geosynchronous Space Situational Awareness Program (GSSAP)**. GSSAP remains our hallmark program for space domain awareness. It is imperative we get this capability on orbit to support our warfighters by the end of the year.

Additionally, the **Ground-Based Optical Sensor System** program is on track to deliver upgrades to the Ground-Based Electro-Optical Deep Space Surveillance system at the White Sands Missile Range and Maui sites in FY25 and FY26, respectively. These upgrades, which include replacement of legacy optics, camera hardware, and software, are projected to allow the sites to make valuable space domain awareness contributions for the next 20 years, and will enable increased sensitivity and improved search rate, accuracy, and throughput.

To ensure our warfighters can count on space capabilities throughout the spectrum of conflict, we must maintain robust cybersecurity and cyber defense. As an example of cyber defense, we recently awarded a new task order for **Defensive Cyber Operations – Space**, consolidating and centralizing the current contracting vehicles to provide improved terms and cost control, and enhancing our cybersecurity posture and resilience.

CHALLENGES

Transforming the space architecture to combat the threat 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.

The three long-standing troubled programs, GPS Next Generation Operational Control Segment (**OCX**), Advanced Tracking and Launch Analysis System (**ATLAS**), and Military GPS User Equipment Increment 1 (**MGUE Inc 1**), need to get over the finish line.

OCX continues to be a challenging program. OCX is a prime example of the difficulty in tackling complex satellite command and control (C2) systems and extremely large software development all at once, a practice I am working to ensure is not repeated in the future. We are anticipating government acceptance of OCX later this year and completing the final Acquisition Program Baseline (APB) milestone of Ready to Transition to Operations in spring 2025. We are getting close to completing the baseline effort and need Congress' support with stable funding to ensure OCX can deliver.

ATLAS has made significant progress since we broke the program into more manageable deliverables. The program is now on schedule to deliver capability by September 2025 that, when coupled with existing Space Force C2 systems, will provide sufficient capability to enable the decommissioning of the legacy Space Defense Operations Center system.

MGUE Inc 1 is improving. Since the January 2021 re-baseline, MGUE Inc 1 has successfully completed several major milestones in line with the 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. MGUE Inc 1 remains on track to meet its two remaining APB milestones: Program Executive Officer (PEO) Certification for the U.S. Navy Arleigh Burke Class Destroyer and the U.S. Air Force B-2 Bomber. The program will work through follow-on developmental and operational testing in FY25, which is expected to result in formal delivery and close-out of MGUE Inc 1.

In addition to these legacy troubled programs, another program I am watching closely is **Next Gen GEO**. The Next Gen GEO program must deliver the primary mission payload this spring and continue to make progress and stay on schedule for Vehicle 1. The payload is in test, but over a year late. We cannot afford delays, and I am engaging with this program frequently to mitigate further slips.

Furthermore, **launch** is foundational to our ability to deliver critical capabilities to orbit, and we need the commercial launch industry ready to meet the growing demand. Over the last five years, ULA averaged only six to seven launches per year, and now, with the growth in demand, needs to significantly increase its cadence to around twice a month. ULA's ability to ramp up starts with the successful completion of the second Vulcan certification flight. Failure to complete the second certification flight will delay the launch of critical national security payloads this year, including GPS III-7, USSF-106, and USSF-87. In parallel, Blue Origin needs to scale its production of BE-4 engines. We are keeping an eye on whether these two companies can scale to meet our needs.

We have proven we can build small satellites quickly. As we start to deliver PWSA operational ground and 126 Tranche 1 Transport Layer satellites this fall, **adoption and use of Tranche 1 next year will be key**.

Finally, thanks to the Assistant Secretary of Defense for Space Policy's efforts in rewriting DoD's Space Classification Policy in December 2023, we are working on recommendations for the Deputy Secretary of Defense to **move large amounts of critical program information out of Special Access Program stovepipes**. Reducing classification barriers will significantly improve our ability to integrate space with other domains and enable better sharing with our Allies and partners.

MANAGING THE SPACE ACQUISITION ENTERPRISE

I have issued three sets of guidance to the space acquisition workforce since my confirmation in April 2022 that define our space acquisition tenets, the formula for going fast in space acquisition, and a list of essential program management skills. This guidance is key to improving the space acquisition enterprise.

In October 2022, I established strategic acquisition guidance outlining nine **Space Acquisition Tenets** (Appendix A) that formed the basis of a new direction to transform our space acquisition enterprise. These nine tenets strike at the core issues that slow us down. To emphasize how the tenets enable speed, last year I shared a **simple formula for going fast in space acquisition** (Appendix B), which now serves as the cornerstone of our approach to build resilient architectures faster. The tenets and formula provide the vision for how our space acquisition workforce will deliver space capabilities to outpace the threats. Aligned with this vision, our space acquisition workforce is adopting a culture of speed and must hone the **essential program management skills** outlined in the guidance I issued in December 2023 (Appendix C) to be successful.

When the tenets, formula, and essential skills are applied, our space acquisition enterprise will

transform the space architecture while continuing to provide crucial capabilities for our nation. This approach is all about **speed in space acquisitions** and can be applied to all systems in all orbits to get capabilities to the warfighter on operationally relevant timelines.

While designed to focus on speed, the formula yields additional benefits, including enhanced workforce satisfaction and faster technology refresh. First, the workforce can participate in an entire acquisition from start to launch in just three years. With a traditional 7- to 10-year large development effort, we see significant personnel turnover during that timeframe. Typically, the government would have at least three different program managers over the course of a program – generally one program manager gets the program started, the next one gets the program through Critical Design Review, and the next one may get to IOC. By doing shorter development cycles, a single program manager and their team will be able to see the entire acquisition through and will be accountable for the entire end-to-end effort. Therefore, the team will have more ownership, which has positive implications for both the government and industry workforces.

Second, we have the opportunity for significantly faster technology refresh. Using the formula, technology refresh occurs every three years. Compare that with larger traditional space acquisitions where technology insertion and refresh are measured in 10, 15, or even more years depending on the program. The formula inherently drives faster modernization of our space assets, by allowing the on-ramp of new technologies every three years.

So now that we have the tools, we need to execute. **Our job and our top priority as acquisition professionals is centered around execution.** Simply defined, this means we must deliver programs on cost and schedule that work.

My focus is on ensuring that our acquisition strategy and RFP documents are realistic and executable. This means that our source selection plans must lead to awarding executable contracts. These are contracts with realistic and achievable cost and schedule baselines, performed by contractors with the right expertise, skills, and staff to do the job. Once under contract, we must proactively manage program baselines to deliver systems that work on cost and schedule.

Delivering on schedule is important because we must be ready to secure U.S. interests in, from, and to space, which includes supporting the Joint Force. Given the threats and increased capabilities of our competitors, and with our relatively flat funding, delivering on cost is more critical than ever. Every time we overrun a program, we basically rob our future efforts to modernize or do anything new, which does not allow us to stay ahead of threats to U.S. interests. We also stifle future innovation by limiting investment dollars to cover schedule slips and cost overruns. We simply cannot afford to do this anymore.

To maintain focus on execution, I remain committed to a battle rhythm of proactive, frequent engagement and periodic strategic reviews of our programs with my portfolio managers and PEOs. I continue to conduct status reviews with each of my PEOs every two weeks to discuss the status of programs within their purview. I also hold Quarterly Program Reviews for a deeper program analysis. During these quarterly reviews, the government program managers present the technical, schedule, cost, and staffing status, open risks and issues, upcoming activities, and an

overall assessment of program health. Troubled programs continue to receive deliberate attention and targeted intervention to return them to a healthy status.

Holistically, these reviews enable my workforce and me to ensure all our programs remain focused on delivering rapid, resilient, and integrated capabilities to our warfighters, on cost and on schedule.

I also continue to use the **Space Acquisition Council (SAC)** 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.

CONCLUSION

We continue to transform the space architecture to be more resilient and provide additional capabilities for the Joint Force. Our focus is on speed in our acquisitions and delivering programs on cost and schedule.

Thank you to the Committee for all your support to the Space Force and space acquisition. I look forward to your questions.



DEPARTMENT OF THE AIR FORCE
WASHINGTON DC

OFFICE OF THE ASSISTANT SECRETARY

31 October 2022

MEMORANDUM FOR THE DEPARTMENT OF AIR FORCE SPACE ACQUISITION
WORKFORCE

SUBJECT: Space Acquisition Tenets

As threats to space systems continue to evolve, and as space becomes even more important in protecting and giving an advantage to our troops, timely delivery of space capabilities becomes even more critical for the Nation. Our top three priorities for space acquisition include driving **speed** into our acquisitions in order to deliver new capabilities faster to outpace our adversaries and maintain the technological advantage we get from space; making our space architecture more **resilient** so that it can be counted on during times of crisis and conflict; and **integrating** our space architecture with other war fighting domains and across the Department's Operational Imperatives to give our warfighters a strategic edge.

The traditional ways of doing space acquisition must be reformed in order to add speed to our acquisitions to meet our priorities. Former approaches of developing a small amount of large satellites along with large monolithic ground systems that took many years to develop on cost plus contracts can no longer be the norm. To gain speed we must shorten development timelines by building smaller satellites, acquiring ground and software intensive systems in smaller more manageable pieces that can be delivered faster, using existing technology and designs to reduce non-recurring engineering to enable speed, taking advantage of commercial systems and capabilities, and most importantly delivering programs on cost and schedule through solid program management discipline and execution.

To enable this space acquisition philosophy going forward, the following **9 Space Acquisition Tenets** will serve as guideposts for space acquisition:

1) **Build Smaller Satellites, Smaller Ground Systems, and Minimize Non-Recurring Engineering**

Build smaller satellites in order to shorten development timelines from many years to just a couple. Use existing technology and designs to minimize non-recurring engineering and shorten development schedules. This will have the additional benefit of accelerating technology refresh as well. Acquire ground and software intensive systems in smaller more manageable pieces that can be delivered faster.

2) **Get the Acquisition Strategy Correct**

Establish good acquisition strategies up front including contract type and contract incentives for both speed, and performance. Have clear, specific, unambiguous Statements of Work

(SOW), concepts of operations, and requirements for the request for proposal. Minimize and avoid Government Furnished Equipment (GFE) and avoid putting the government in the middle of multiple contracts as the integrator. Be clear on how you will engage and interact with industry within your SOW and minimize the Contracts Data Requirements List (CDRLs) to critical items. Do not be afraid to use fixed price contracts. Fixed price contracts increase the level of program management discipline across industry and the Government. Use red teams, and peer reviews, as well as the Acquisition Strategy Process to set a good strategy.

3) **Enable Teamwork Between Contracting Officer and Program Manager**

The relationship between the Contracting Officer and the Program Manager are key to any successful acquisition. Contracting Officers should be collocated within and be part of the Program Executive Officer (PEO) teams. It's a solid team between the Program Manager and Contracting Officer during all phases of acquisitions that will enable success.

4) **Award Executable Contracts**

Evaluate cost and schedule realism as part of the proposal evaluation to avoid low bids and buy ins. Ensure companies have the correct skills to successfully execute the contract on cost, schedule, and meeting performance. Negotiation between Government and industry should be Win-Win – the Government gets a capability fast that works, and industry has a right to a fair profit. Keep up with news and information about the space industrial base. Understand what companies are capable of doing or not doing otherwise this can lead to awarding development contracts to companies that do not have the experience, skills, and domain expertise to do the job.

5) **Maintain Program Stability**

Establish the contract cost and schedule baseline and manage to it. Push back on year-to-year budget changes that drive rebaselining which diminish speed from acquisitions. Avoid Undefinitized Contract Actions (UCAs) that last more than a few months and budget promises to fix programs the following fiscal year. Avoid accepting new requirements after going on contract, and do not accept requirements that industry cannot technically meet.

6) **Avoid SAPs and Over Classifying**

Putting programs in a Special Access Program (SAP) hinders our ability to integrate space capabilities across other domains. Protect capabilities, if necessary, through normal security classification guidelines such as SECRET and TOP SECRET but avoid creating stovepipes with SAPs which can limit our ability to integrate with other domains and can hinder getting ideas from a broader pool of industry. Avoid classifying systems as NOFORN to enable future sharing with Allies and Partners.

7) Deliver Ground Before Launch

Ensure ground systems and modifications are completed and ready for operations before launch of a new capability. This will allow operations/users to take advantage of new capabilities after launch.

8) Hold Industry Accountable for Results

Hold industry accountable to execute on cost, schedule, and meeting performance commitments on the contract. With the urgent need to provide new space capabilities faster and for architecture resiliency, do not tolerate bad performance that we have seen in some traditional large satellite and large ground cost plus contracts. Take corrective action and consider all tools available for poor performers including loss of fee, use of the Contractor Responsibility Watch List, and if necessary, stopping programs. Industry works for you, so be a demanding customer.

9) Execute – Deliver Capabilities that Work, and Deliver them on Schedule and on Cost

Proactively manage the program by continuing to actively track schedule, cost, and technical progress. Identify issues early in order to quickly resolve them. There is no better way to get speed into acquisitions than to deliver programs that meet performance requirements, on schedule and on cost. This is our most important tenet. Success is measured by executing on plan.



FRANK CALVELLI
Assistant Secretary of the Air Force
(Space Acquisition & Integration)

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DEPARTMENT OF THE AIR FORCE

WASHINGTON DC

OFFICE OF THE ASSISTANT SECRETARY

05 April 2023

MEMORANDUM FOR THE DEPARTMENT OF AIR FORCE SPACE ACQUISITION WORKFORCE

SUBJECT: **Three Years or Less from Contract Start to Launch - A Simple Formula to Go Fast in Space Acquisition**

Today our space systems are increasingly under threat. Strategic competitors want to deny our advantage in space during a potential conflict. Our current space architecture was designed when space was a benign environment. Previously, building large satellites with long development cycles, on cost-plus contracts made sense, but that time has passed. To meet the pacing threat, we are **transforming** from the few 'big juicy targets' of the past to a more proliferated and resilient architecture that can be counted on during times of crisis and conflict.

Based on the 9 Space Acquisition Tenets, a simple formula can be derived for going fast in space acquisition:

- 1) Build smaller systems**
- + 2) Use existing technology, designs to minimize non-recurring engineering**
- + 3) Drive contract scope to 3 years or less from start to launch**
- + 4) Use fixed price contracts**
- = Mission Capabilities Faster to Our Warfighters**

To deliver capabilities faster, we must **build smaller satellites**. Even with minimal non-recurring engineering (NRE) or minimal design changes, large satellites take time. They require big bus structures, big tanks, big payloads, and big components, which all take time to develop and test. Further, few missions require us to build big, and we should disaggregate larger systems into smaller, more proliferated systems, across all orbits. Building smaller satellites allows us to accelerate.

Next, we must **minimize NRE by using existing designs and technology** to drive shorter development cycles. Our current acquisition culture allows government and industry to drive onerous development of new technologies as a foundation for major systems acquisitions. This drives significant NRE on contract, prolongs program schedules, and often prompts cost plus contracts. There was nothing wrong with this approach in the past, but now real threats in the space domain force a different solution.

To counter present and future threats, we must capitalize on government research and development, industry internal research and development (IRAD), and corporate commercial investments to create new technologies we can incorporate into our acquisition programs. For example, we should leverage commercial satellite buses, and existing focal plane technology

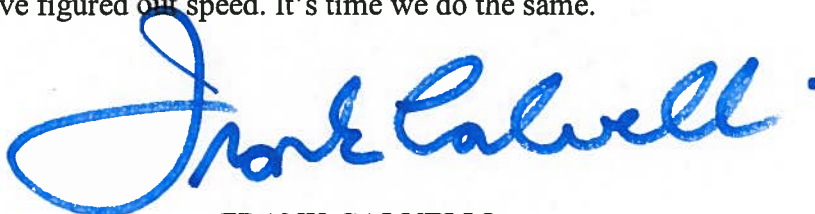
rather than build new or improved. Coupled with shorter development timelines, this approach also has the benefit of allowing for much faster technology refresh.

Delivering space capabilities faster requires program baseline stability. The last two elements of the formula address program stability by **shortening contract timelines to three years or less from authority to proceed to launch** and by using **fixed-price contracts**. Instability and constant changes to a program baseline kills acquisition speed and typically occurs on long development efforts. Baseline instability is caused by rethinking and modifying program scope each budget season, changing requirements, long undefinitized contract actions, annual cost re-estimating on cost-plus contracts, and using multiple contract actions to develop a single class of satellites.

By building smaller satellites and reducing NRE, we can scope programs to be achievable in three years or less. With shorter acquisition contracts, fixed-price contracting adds a level of discipline, prevents the constant rethinking of programs and scope changes with each yearly budget build, avoids changes from cost re-estimating, stops requirement changes, and promotes competition from more commercial-like/non-traditional space companies. Having stable baselines allows us to go fast.

Overall, this formula and approach is all about speed in space acquisitions. It can be applied to all systems and all orbits. We should continue to **disaggregate** traditional larger systems with multiple payloads into smaller satellites, **diversify** orbits, and **proliferate**. When we follow this formula, along with the 9 Space Acquisition Tenets, we will deliver needed capabilities to warfighters faster, transition to a more resilient and capable space architecture, achieve our Operational Imperatives, and counter the growing threats to our space systems.

Our competitors seem to have figured out speed. It's time we do the same.



FRANK CALVELLI
Assistant Secretary of the Air Force
(Space Acquisition & Integration)

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DEPARTMENT OF THE AIR FORCE
WASHINGTON DC

OFFICE OF THE ASSISTANT SECRETARY

18 December 2023

**MEMORANDUM FOR THE DEPARTMENT OF AIR FORCE SPACE ACQUISITION
WORKFORCE**

**SUBJECT: Essential Program Management Skills for Government Space Acquisition
Professionals**

We have defined our 9 Space Acquisition Tenets to drive space acquisition, as well as our Formula for going fast. The third and final piece of the puzzle is you - our amazing and dedicated space program managers and acquisition professionals. Here are some of the things you need to learn and gain experience with that will allow you to drive acquisition speed, deliver programs on cost and schedule, and be successful in your career.

1) Master the Fundamentals of Acquisition

Learn the different contract types and incentive strategies and when to apply them. Be able to develop an acquisition strategy, statement of work, and elements of a competitive request for proposal including Section L and M. Get source selection experience by leading or being part of a team and learn how to negotiate a contract. As part of the proposal evaluation process, be able to evaluate schedule, cost, staffing realism, and whether the company has the skills and expertise to successfully execute the program on cost and schedule. Know the acquisition rules and take advantage of flexibility provided in the DoD 5000 series and Adaptive Acquisition Framework.

The ability to develop a good acquisition strategy, well crafted request for proposals, and awarding executable contracts are key to successful space acquisition.

2) Develop Expertise in Satellite Development and/or Ground Software Development

Having a deep technical understanding of what it takes to acquire and develop a satellite or ground system allows you to proactively solve technical issues, review contractor design material, challenge technical assumptions, effectively evaluate technical proposals, make better decisions, reduce technical risks, and drive the acquisition to deliver on cost and schedule.

3) Relentlessly Manage Your Program Baseline

Learn how to effectively manage a program once under contract and how to measure technical and programmatic progress. Engage daily and take action to solve technical issues early.

Learn how to evaluate and analyze a contractor schedule and critical path. Track schedule, cost, technical, and staffing status by routinely reviewing planned vs actual achievements.

Understand the different types of margin including cost and schedule and how to apply them. Actively address and manage risks by using a simple risk management process to track and address risks.

Delivering on cost and schedule is a critical element of speed. We need to execute and meet our commitments by delivering programs that work, on schedule and on cost.

4) Utilize Critical Thinking and Effective Communication Skills

Develop and use critical thinking skills when reviewing program status information, and when reviewing data to assess and solve difficult technical issues. Be able to effectively present programmatic data and technical status of your program to all stakeholders. Have good written, presentation, and email skills.

Being able to think critically and communicate effectively are key skills that will allow you to ask the right questions and convey complex technical information effectively.

5) Understand How Industry Operates and What Motivates Them

Learn how industry operates and what motivates them by analyzing financial statements, and top level financial ratios. Review industry annual 10-Ks and quarterly reports. Understand the role of revenue, growth, profit, free cash flow, and contract backlog play on company financial reporting.

Track industry capabilities of both traditional defense contractors, and commercial space companies. Know what industry can and can't do. Avoid awarding new non-recurring engineering for capabilities that already exist at a different company. Take advantage of commercial capabilities and services to drive speed.

6) Team with Mission Operations

Team with operations early on in the acquisition life cycle. Work with operations to develop easy to operate user interfaces, test and acceptance strategies, training plans, and facility implications of your system (e.g., power and floor space).

Understand how the current system is operated and make sure you are replacing it with a better capability.

Think life cycle costs and plan accordingly in the budget for sustainment and maintenance.

7) Share, Collaborate, and Help Each Other

Help each other be successful. Share best practices on request for proposals, statements of work, test and transition plans, etc. Share lessons learned on successful and challenged programs. Ask for help on tough programs and do peer reviews to help each other solve difficult issues.

We are all in this together across the Department. We all need to help each other, learn from each other, and help everyone succeed across the Department for the mission.

8) Know Your Mission Area and Drive the Future

Whether its space domain awareness, missile warning, positioning navigation and timing, military satellite communications, space sensing, or other missions, develop a deep technical understanding of your mission area. It is critical to keep up to date with current intelligence and threats your mission area may be facing.

Use your understanding of the mission to identify mission gaps and shortfalls, drive research and development, and define future acquisitions to provide additional capabilities needed for the mission.

9) Become Proficient with the Budget Cycle and Working with Congress

Understand how the budget process works within your organization, at the Pentagon, and in Congress. Get experience developing budgets for your program and defending them in the budget process. Look for opportunities to brief Congressional Staffers and Members of Congress on your program and create an environment of program transparency.

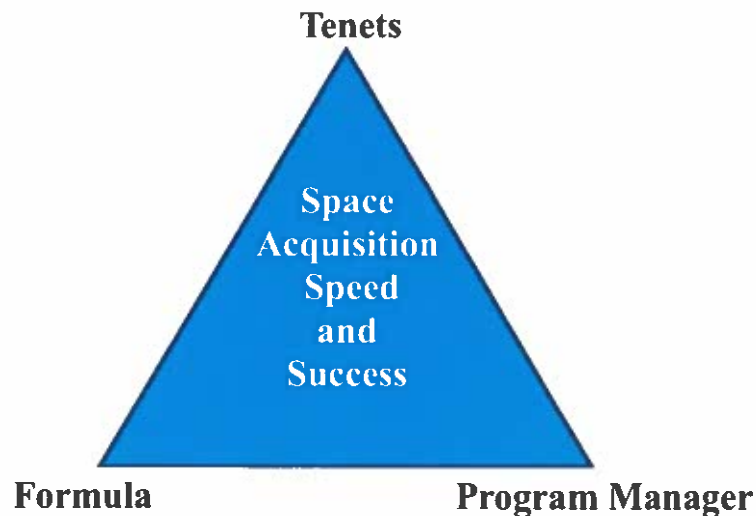
A key part of program management is your ability to define and defend your budget, as well as interacting and keeping Congress informed.

10) Ensure Your Program Integrates End to End and Works as a System

Understand the bigger picture of how your system fits in to the mission and interfaces with other programs. Make sure your portion of the program integrates with other pieces to form a complete system or capability. Develop systems engineering skills to compliment your program management skills and ensure cross program interfaces are defined and properly tested.

What you are developing may only be one part of an overall system. It is critical that you have the systems engineering skills and perspective to ensure your program integrates properly with other elements to form an end-to-end system.

Experience takes time. These are essential skills you need to learn and use over your career in space acquisition. If you use all three pieces of the puzzle, the 9 “Space Acquisition Tenets”, the “Simple Formula to Go Fast in Space Acquisition” and the “Essential Program Management Skills for Government Space Acquisition Professionals” we will rapidly transform our space architecture to be more proliferated, more resilient, and provide needed capabilities for our Nation at speed.



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