Space Leadership Forum:
Key Findings
February 13, 2025

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Executive Summary

The Aerospace Corporation partnered with Space Foundation and Amazon Kuiper to hold an executive-level forum on February 13. The Forum's theme, titled "Strengthening America's Future Through Commercial Space," featured agency leaders, CEOs and startup founders, investors, researchers, and elected officials who convened to focus on how to accelerate and advance our national advantage through commercial space, a key theme identified by The Aerospace Corporation's Center for Space Policy and Strategy in Space Agenda 2025. The event followed the Chatham House Rule, with no media present in order to encourage frank and open participation.

Distinguished speakers from the U.S. Congress, industry, the executive branch, the military, and academia debated the urgency of rapid acquisition, the state of the current space economy, regulatory challenges, and ways to catalyze innovation. A series of thought-provoking collaborative exercises were woven throughout the duration of the program. A breakout session in the afternoon built off the day's discussions to dive into approaches that could reinforce U.S. advantage in space. The breakouts focused on five core areas: innovation, cross-enterprise integration, regulatory reform, global competition, and building a U.S. vision for the future.

Key Findings

Notable insights from the event include key findings and breakout session insights, both of which are discussed in more detail below.

- **Act Now Because the Need for Change Is Urgent.** The United States is in a more competitive space environment than ever before, both from a national security and a commercial context. Some changes will take time. However, maximizing our competitive advantage rests on us getting it right swiftly.
- **Recognize that Policy, Processes, and Authorities Are Not the Biggest Problem.** The necessary national policies and acquisition processes and authorities exist today to leverage commercial space has been part of national policy issued by every presidential administration since 1982. The bigger challenges are the culture, incentives, and enforcement of those policies that have kept the United States from implementation, along with budgets. We have the tools; we must drive the way.
- **Cultivate a Foundational Acquisition Strategy.** A more functional and encompassing foundational acquisition strategy needs to be developed to deliver a range of enterprise needs that includes how to seed and foster commercial capabilities in critical transition points (early

stage, nimble and up and coming, and traditional contractors) and the idea of "try a little, buy a little" to allow for more companies to showcase their services and for the government to experiment what services are best utilized for their needs before making larger investments.

- **Think Commercial First.** Instead of looking at programs and assessing whether requirements can be met by a commercial capability, take the approach of commercial services as the default, then augment only in areas where there aren't solutions that can be developed in a time of need. Additionally, learn from the U.S. government's (USG's) successes: NASA, for example, has leveraged commercial services successfully in some areas. Other agencies should seek to replicate some of the effective practices and approaches NASA has adopted, while understanding their limitations.

- **Improve the Government/Industry/Investor Interface**. This three-way collaboration is key, and we need to create more opportunities to share. These interfaces can be cultivated through shared sandboxes, at forums for threat intelligence education, in wargames, and with needs/capability workshops to drive a new way of co-developing possible approaches.

- **Understand the Reality of the Markets.** Although the United States benefits from having the most expansive and diverse private space sector in the world, the market for many commercial capabilities and services is still underdeveloped, especially beyond government customers. If the United States wants to rely on commercial capabilities in the future, it must take a more assertive role in growing and cultivating a viable marketplace.

- **Find the Buying Balance.** We need to balance government agreeing to buy the first five of the production line with being reliant solely on what industry offers. Creating incentives for industry to build capabilities should not allow industry to drive what the government acquires.

- **Identify, Shape, and Monitor Signposts for a Healthy Commercial Sector.** Agencies within the government, particularly on the defense side, can help companies early on in their development, but they need to help bridge those early government investments into large contracts. That bridging has failed to occur for a lot of promising companies.

- **Implement a National Commercial Space Strategy.** Building and developing roadmaps for whole-of-nation capability needs from commercial space will help us get where we need to be and fast. Similarly, clarity and transparency with allies and partners on their roles and opportunities to contribute are essential. This would help clarify what's needed, where we are going, and help investors/insurers build confidence and lockstep with the momentum needed to get us there.

- **Gain Clarity and Certainty Through Regulatory Reform.** Failure to provide proper oversight of U.S. private sector activities in space or pulling back from global governance discussions could lead to worse outcomes and create overly burdensome regulation. The most impactful near-term change we could do to improve space traffic coordination is to require satellite operators to share contact information and locations of their space objects. Additionally, streamlining the number of offices and steps a company is required to go through needs to be seriously addressed. (We've been talking about this forever, now is the time to do it.)

Breakout Session Insights

The following ideas are not Aerospace-generated recommendations but, rather, ideas that were provided by the participants in the breakout sessions and captured by the facilitators. Each idea was developed by a small group of (5 to 10) leaders and experts working in parallel across five themes during the 45-minute brainstorming session. Below is a summary of each major breakout theme along with the ideas and follow-on actions generated by the three subgroups under each theme. While many of these ideas require further analysis and fleshing out beyond the time allotted for this exercise, this is an invitation to the community to work toward accelerating the refinement and implementation of the ideas believed to best positively contribute to delivering national advantage.

1. Catalyzing innovation for the space enterprise

How could the USG better foster and catalyze the innovation ecosystems to transform the space enterprise tenfold?

Macro Description: While the United States remains a strong innovation hub in many key technology areas and is a distinguished leader in space technology, are we best postured to lead space innovation into the future and to maximize the benefit to the American people? What investment mechanisms and cross-society, industry, academic, and government collaborations are needed to seed the future success of the industry and for the country? This session will explore what solutions are needed to guarantee strong U.S. innovation in space, now and for the future.

Government/private capital investment collaboration (especially in immature markets)

Problem Statement: Given that many areas of space markets are immature or do not even yet exist, how does the government collaborate effectively with private capital on investing to seed future value?

- **Idea #1:** Tentpole Project: The government underwrites four large-scale space projects to stimulate spin-off commercial ideas and outcomes.
  - > *Next Steps:* Pick a set of projects, fund them, and go! The hardest part will be who leads this. Is it the White House or an interagency effort?
- **Idea #2:** Create a five-year plan of space technology goals.
  - > *Next Steps:* The government needs to agree, clarify (and hold the line), and publish what the goals and milestones are along the five-year plan.

Interagency cooperation/collaboration on commercial technology investment and adoption

Problem Statement: Given the stovepiped authorities and cumbersome decisionmaking across all the agencies and departments, how can the government do better at communicating, integrating (when appropriate), and leveraging resources to deliver its missions?

- **Idea #1:** Create an AI system that understands all technology investments and mapping across the USG to aid in better investments.
  - > *Next Steps:* Create a White House/Office of Science and Technology Policy (OSTP) working group to address and take the lead.
- **Idea #2:** Create a common space marketplace for USG.
  - > *Next Steps:* Congress and White House take the lead on setting up the requirement.

Innovation ecosystems that go beyond current industrial base offerings
Problem Statement: What can be done to the gap between private sector innovation and what the government is funding in direct programs? How can even more value be generated through transformational (not incremental) innovation to yield significant national advantage and deliver prosperity to Americans? How might others in the innovation ecosystem play a role (academia, non-profits, national laboratories, etc.)?

- **Idea #1:** Rethink how the USG is willing to approach and accept risk that is balanced with speed, capability, and mission set.
  - > *Next Steps:* Create a collaborative engagement between commercial and the USG to assess and discuss risk/opportunity benefits of various approaches.
- **Idea #2:** USG to jump start investment on key capability and technology areas across a portfolio approach in which commercial industry isn't currently investing.
  - > *Next Steps:* Leverage models like the Defense Innovation Unit (DIU), In-Q-Tel (IQT) and the National Science Foundation (NSF) to jump start university research and industry small business innovation research (SBIR) programs in critical areas.

2. Integrating and acquiring commercial space

How should the United States best approach integrating and acquiring commercial space into its missions for national advantage?

Macro Description: Since the 1980s and 90s, every U.S. administration has told agencies to use commercial space services and capabilities to the maximum extent practicable. Yet, we are only seeing modest investments in many commercial space capability areas, and we are not seeing national security agencies replace traditional acquisition with commercial services on a large scale. Beyond the decision to acquire commercial services, the government also needs to make determinations for the appropriateness of individual vendors and individual missions. Moreover, integration becomes a core challenge with systems that were not necessarily designed to interoperate with one another. These sets of issues raise questions about the planning and budgetary process, acquisition, operational and technical integration, and requirements.

Aligning policy direction, budget cycle, and acquisitions for the use of commercial space
Problem Statement: Acquisition policy and process, combined with the long timelines and strict requirements in the planning, programming, budgeting, and execution (PPBE) process to document spending plans for programs of record, make the "extent practicable" hurdle very high. Assuming budget cycles are fixed, what acquisition policy and process need to change to better enable the insertion of commercial space capabilities into programs of record when there's a good reason to do so?

- **Idea #1:** Formal training on "hacking defense acquisition."
  - > *Next Steps:* Work with third parties who provide this training today for accelerators/startups to have readily available access to this course material.
  - > Incorporate into formal government and professional military training.
- **Idea #2:** Change incentive structures for program executive offices (PEOs) to consider commercial first.

- > *Next Steps:* Collect successful case studies – what was it about these programs that made them successful examples?
- > Ideation needed to create an internal incentive structure to institutionalize the thought process to consider commercial first.

Deciding when to use commercial assets or services for a mission
Problem Statement: When and how should federal agencies, including national security agencies, make decisions about when to use commercial services or assets for a particular mission? What are the types of considerations and tradeoffs policymakers need to weigh?

- **Idea #1:** National security agencies need to, at a minimum, purchase attractive commercial options for augmentation and redundancy purposes, benefitting the industrial base and serving as relatively inexpensive (compared to traditional acquisition) alternatives if government-developed solutions fail.
  - > *Next Steps:* Make trades about how these acquisitions should occur (e.g., in a commercial services line or in an issue area budget line under a revised budgetary construct).
  - > Forecast commercial technological trends and weave that analysis into force structure decisions and trades.
- **Idea #2:** National security agencies should also identify unique attractive aspects of commercial services (e.g., the ease of sharing commercial data with foreign partners on the eve of Russia's invasion of Ukraine).
  - > *Next Steps:* Determine the most effective approaches for capturing characteristics that would not be part of USG-developed solutions that would be part of commercial options.
  - > Determine whether commercial "requirements," or something less specific, should exist to signal for private firms.

Integrating commercial services and capabilities into government systems
Problem Statement: After deciding when to use commercial services, how should the government best integrate, and how does that change across capability areas (for example, satellite communications, electro-optical, space situational awareness)?

- **Idea #1:** Foster a path to integration: Commercial integration must be an embedded thought process in USG acquisition and operational mindset.
  - > *Next Steps:* Bring commercial partners into the program cadre, ensure proper training and education and updates on commercial for government, and ensure a significant portion of wargaming deals with commercial services.
- **Idea #2:** Start commercial: Instead of asking if commercial can fill in, start with the assumption it will be commercial until proven otherwise.
  - > *Next Steps:* Acquisition authorities must have mechanisms set up to enforce and incentivize this thinking.

3. Regulatory reform

What specific regulatory innovations can best posture the U.S. space sector for economic growth and innovation?

Macro Description: The existing U.S. regulatory regime for private sector space activities that are increasingly misaligned with the speed and direction of commercial industry. In some areas, multiple agencies have authorities while, in other areas, no agency has clear authority, resulting in a slow, opaque, and cumbersome process. Multiple initiatives over the last 20 years have tried to reform various parts of the process with limited success, often due to disjointed efforts between the different branches of government. This session focuses on identifying the most impactful near-term steps to reform, clarify, and streamline the regulatory framework to enhance innovation and U.S. leadership in space.

Oversight of novel and in-space activities

Problem Statement: Over the last decade, the USG has discussed how best to provide its oversight and authorization responsibility for innovative and new private sector space activities while also streamlining the process but without any resolution. What needs to be done to bring clarity and certainty that will enable innovative growth in future commercial space capabilities?

- **Idea #1:** Get consensus on what the goals are for the regulatory/oversight process.
  - > *Next Steps:* Clarify who has authority and provide certainty and a clear timeline to industry (and investors).
  - > Create the right incentives for companies to operate responsibly.
- **Idea #2:** Create more effective communication between the government and new companies on what the current process is and what new technologies and capabilities are coming down the pipeline.
  - > *Next Steps:* Coordinating councils have proven useful forums to allow regulators, trade associations, and individual companies to exchange information.
- **Idea #3:** Clarify and define what "novel space activities" are.
  - > Creating one or more classification categories of space activities can play a critical role in establishing standards for routine activities, freeing up regulators to focus on the truly novel/risky applications.
  - > A pre-application process is useful to create a dialogue between companies and the government to proactively begin those conversations prior to formal filing.
  - > Establishing an independent (i.e., not government or industry) regulatory body (as is done in the UK) or certification authority (as was done for cybersecurity) can help build trust in the regulatory process.

Export controls

Problem Statement: Export controls impose a significant burden on U.S. companies looking to expand to global markets and the ability of U.S. allies and partners to bolster their own space capabilities. What specific areas of space technology should be considered for lower restrictions or exemption?

- **Idea #1:** Set up an external advisory board for determining the "right balance" between national security protections and economic growth.
  - *Next Steps:* Identify where this should sit (White House or neutral party outside government), list out key technology areas that are blocking business vs. security concerns and refine who has the authority to make the decision on net-benefit calculus for the American people.

4. Industrial base policy

What industrial base policies are needed to drive a thriving space ecosystem that enables U.S. leadership in space?

Macro Description: The U.S. space industrial base and its supply chains are unprepared to address current challenges. Recent events have shown that decades of prioritizing efficiency and cost savings have produced supply chains that are fragile, opaque, and incapable of rapidly scaling to meet emergent crises. These weaknesses threaten to undermine U.S. leadership in space, including its efforts to deliver more innovative, integrated, and resilient warfighting capabilities.

Supply chain resilience

Problem Statement: The United States has several existing policy interventions and investments to increase supply chain resiliency, including for commercial, civil, and military space applications. What additional strategic, policy, or regulatory steps are needed?

- **Idea #1:** Rethink USG suppliers as a web/network, not singular chains.
  - *Next Steps:* Further incentivize acquisition category (ACAT) type programs to leverage non-traditional DOD suppliers and smaller firms. (Other transaction authorities (OTAs), for example, incentivize on primes and possibly only one or two key subcontractors.)
  - Incentivize "build only what we [USG] must," by including evaluation of the domestic supplier market proposed in a contractor's bid. That is, encourage layering DOD/Intelligence Community (IC) unique space system elements on top of capabilities already present in the commercial market.
  - Reinvigorate Office of the Secretary of Defense (OSD) planning/investment in critical technology suppliers: look at market sustainability, not just individual entities.
  - Ensure vertically integrated contract awardees have competitors; likewise, disfavor further industry consolidation.
- **Idea #2:** Technology development funding (e.g., small business technology transfers (STTRs) should also include business development support.
  - *Next Steps:* Create a network that can pair entrepreneurs with *business* mentors in the space industry.
  - For STTR/SBIR and similar tech development funding, expand evaluation/management considerations, and add funding, to support maturation of supplier's leadership team in parallel to the technology maturation.
  - Strengthen and explicitly include supplier integration into PEO planning for funding on STTRs, STRAT-FI, etc., such that every completed project includes an option plan for follow-on integration into USG acquisitions.

Role of allies and partners for a dependable supply chain
Problem Statement: Technological innovations are creating new engagement opportunities with allies and partners, many of whom are also expanding their commercial, civil, and military space capabilities. Should the United States expand its engagement with allies and partners on space capabilities? How might that engagement strengthen supply chains? What are other potential benefits and drawbacks?

- **Idea #1:** Congressional action for International Traffic in Arms Regulations (ITAR)/Export Administration Regulations (EAR) reform.
  - *Next Steps:* Refine international diplomacy strategy and garner bipartisan champion to see this through.
- **Idea #2:** Revise and update the National Space Transportation Policy (NSTP).
  - *Next Steps:* Refine international diplomacy strategy and garner bipartisan champion to see this through.
  - Executive branch or congressional action to drive modification of NSTP to more inclusively involve allies/partners and allow for greater flexibility to partner.

Critical minerals and strategic competition (focus on space needs)
Problem Statement: The United States has identified 50 critical minerals that constitute a strategic vulnerability for the nation's security and prosperity. Many of these critical minerals are key inputs to space applications and space supply chains. China's dominant reserves of some critical minerals and increasing use of export restrictions raise concerns that the United States could be cut off from these key inputs. In addition to recent stockpiling efforts, how should the United States address its dependence on China for space-related critical minerals?

- **Idea #1:** Subsidize existing U.S. or allied partner mineral refineries.
  - *Next Steps:* With the current political environment focused on tariffs, sourcing minerals outside of the United States seems ill-advised; U.S.-based or strategic allied country sourcing is most promising. Establish a Department of Energy or Defense Logistics Agency directorate responsible for critical minerals; conduct surveys to identify top priority critical mineral stakeholders in the U.S. economy; and provide government contracts to *all* U.S. commercial or allied partner refineries (offer to all so as not to create competition) that serve those high priority needs.
- **Idea #2:** Government-sponsored recycling program.
  - *Next Steps:* Government should establish a program to turn in used technology as a taxpayer refund to increase supply of chips and reduce demand for China commodities.
- **Idea #3:** Invest in alternative resources for products or alternative products to solve the same problem.
  - *Next Steps:* Private sector markets are already doing this: encourage private sector innovation through fiscal incentives. This option would decrease U.S. dependence on other countries and provide the United States more autonomy in what we are producing.

5. Building a long-term national vision for space

How might the United States approach building a forward-leaning whole-of-nation vision that will ensure continuation of U.S. leadership?

Macro Description: While the United States remains a strong innovation hub in many key technology areas and is a distinguished leader in space technology, is it best postured to lead space innovation into the future and to maximize benefit to the American people? What investment mechanisms and cross-society, industry, academic, and government collaborations are needed to seed the future success of the industry and for the country? This session will explore what solutions are needed to guarantee strong U.S. innovation in space, now and for the future.

Articulating the national why for space

Problem Statement: Perhaps the most difficult challenge has been in defining to the nation, "Why go to space? What does the United States actually want from space?" What do we want space to be/serve now and in the future for the American people? What are some of our most aspirational goals for space that we can imagine for the future of our country? In this session we'll explore how to overcome the ultimate challenge of defining the why for space for the nation.

- **Idea #1:** Create an overall national vision that will clarify how space can help serve that vision.
  - *Next Steps:* Generate a mechanism (legal, office, processes, etc.) for which a long-term, bipartisan national vision can be cultivated, communicated, and implemented.

- **Idea #2:** Announce a big, bold idea. For example, through U.S. leadership, by the end of the decade, humans will be living on the Moon and Mars.
  - *Next Steps:* Define the bold goal, adequately fund it, get public support, and get the best to drive it to reality.

Agreement and adequate funding in a partisan, short-term political environment

Problem Statement: Increasingly partisan environments pose a significant challenge to getting agreement and having long-term investment and support for big projects. What are the ways in which the country might be able to overcome these challenges so that space can maximize its contributions to the nation's security and well-being?

- **Idea #1:** Use space issues to find a common ground between polarized congressional parties.
  - *Next steps:* Map the landscape of all congressional committees to identify where there is space jurisdictional power, leverage existing caucuses and committees to draw in new members and staff, and highlight nonpartisan space legislation as a place to score early wins and build momentum.

- **Idea #2:** Mobilize Americans to care about space.
  - *Next steps:* Create a broader scale campaign to make space a kitchen table discussion. Expand the scope beyond science, technology, engineering, and mathematics (STEM) and focus on value to Earth, both in space capabilities and in jobs and education. Involve more stakeholders (academia, industry, government, and nonprofits).

Process of synchronizing integration of enterprise strategies (master planning function)
Problem Statement: The stovepiped disconnects between space enterprise players across industry, government, academia, and private citizens can slow development, create hazards, and reduce innovation. How could the nation potentially leverage a master planning function to drive better synchronization and rapid advancement of the space enterprise?

- **Idea #1:** Conduct master planning to evolve space ecosystems using digital engineering environments and AI agents.
  - *Next Steps:* Harmonize commercial capabilities to align with a set of government mission needs using established digital environments.
  - Build skill, capabilities, capacity to leverage organizations and people with end-to-end experience with space systems; develop common lexicon, taxonomy, and semantic ontology for use across the space enterprise.
- **Idea #2:** Bring the community together to set a foundation for an expanding space market.
  - *Next Steps:* Center on an international collaboration project.
  - Coordinate development of cislunar greenfield; identify market opportunities.
  - Establish an intergovernmental agreement and extend International Deep Space Interoperability Standards (IDSS).
  - Develop a space highway with regular cadence of access and return.

Appendix – Space Leadership Forum Agenda

7:30 a.m.	Registration and Breakfast
8:30 a.m.	Welcome Remarks
8:35 a.m.	Opening Commentary
8:45 a.m.	Fireside Chat: Importance of Space on a National Level
9:30 a.m.	Stage Setting Through Space Agenda
9:40 a.m.	Panel A: Rapid Acquisition and Deployment
10:30 a.m.	Break
11:00 a.m.	Panel B: State of Play in Commercial Space and Industrial Policy
12:00 p.m.	Lunch & Space Agenda 2025 Author's Showcase
1:00 p.m.	Panel C: Global Competition and Regulatory Reform
2:00 p.m.	Panel D: How USG Can Best Leverage and Catalyze Commercial
3:00 p.m.	Break
3:30 p.m.	Strategic Options Breakout Discussions
4:15 p.m.	Fireside Chat: Industry Perspective on Moving the Space Enterprise Forward
4:55 p.m.	Closing Remarks
5:00 p.m.	Reception