

Improving Integration and Synchronization of Space Acquisition and Fielding

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ISSUE

As part of a new role, the Office of the Assistant Secretary of the Air Force for Space Acquisition and Integration (SAF/SQ) has identified improving vertical (e.g., with space, ground, and user segments) and horizontal (e.g., with the stakeholder community—including the other armed services—other government agencies, and industry) integration and synchronization as a priority. To assist with this priority, the RAND Corporation’s Project AIR FORCE (PAF) was tasked with defining challenges and recommended ways the United States Space Force (USSF) can facilitate the integration and synchronization of space acquisition and fielding to support the timely delivery of end-to-end space capabilities to the joint force.



APPROACH

We undertook a broad literature review of existing research on U.S. government space-affiliated organizations to ensure that the analysis leveraged and built on prior insights. To supplement the literature review and to determine the current state of space acquisition, we also conducted more than 60 semistructured interviews with subject-matter experts and senior decisionmakers throughout the Department of Defense, other federal government agencies, and the private sector.¹ Finally, to understand the current state of the USSF acquisition ecosystem (i.e., the connections between the various stakeholders in space acquisition), we mapped approximately 90 different stakeholders in USSF acquisition and the relationships among those organizations.



KEY FINDINGS

Key findings from our research are:

- Budget instability at the program level and overall budget inflexibility make it difficult to execute and deliver integrated and synchronized capabilities.

¹ This report was completed in August 2023, and the term current in this report should be understood as “as of 2022.”

- USSF’s ability to orchestrate and deliver a resilient and interoperable space architecture is unclear.
- Internal USSF organizations do not appear to be aligned and communication channels are adversely affected.
- Significant experimentation is ongoing within multiple organizations devoted to innovation, but this experimentation is not visible centrally or across organizations.
- USSF needs to harness and transition the outcomes of experiments and innovation into programs of record or into operations.



RECOMMENDATIONS

Budget Resiliency

To improve budget resiliency, we recommend that USSF take the following actions:

- Create resource-loaded roadmaps of mission capability architectures and conduct sensitivity analyses to better understand and prepare for the impacts of budget actions, such as continuing resolutions, changes to funding levels, or program cancellations.
- Implement a cultural change that values more-open communication with Congress and builds alignment across USSF (field commands and acquisition community), Department of the Air Force, Pentagon, and the greater U.S. space enterprise.

Architectural Focus

To improve architectural focus, we recommend USSF take the following actions:

- Define what constitutes architecture and use this definition to document USSF mission statements and charters.
- Educate the USSF workforce on architecture vision, definitions, responsible offices, and relationships among systems and missions within the architecture.
- Clarify the Space Warfighting Analysis Center’s and Space Systems Integration Office’s roles in defining system of systems (SoS) architecture and in advising the Service Acquisition Executive and SAF/SQ. While SAF/SQ may choose to outsource its needs for SoS engineering talent, advice should not be filtered through an external organization.
- Conduct a workforce study to determine how best to create and sustain an organic SoS and systems engineering expertise within USSF.

Alignment of United States Space Force Organizations

To better align USSF organizations, we recommend USSF take the following actions:

- Formalize and approve mission statements and charters to clarify and document organizational roles in space acquisition.
- Harmonize the functional constructs used in describing space operations and acquisitions to the extent reasonable and standardize mission area terminology.
- Continue to improve operator and acquirer communication processes.

Harnessing Space Innovation and Experimentation

To better harness ongoing innovation and experimentation, we recommend USSF take the following actions:

- Require organizations involved in space acquisition to improve visibility into their efforts and ensure that capability roadmaps include all experiments and innovations.
- Implement a cultural change that values enterprise and mission success over personal or individual program success.

Transitioning Technology from Acquisition to Operations

To more effectively transition acquired items into operations, we recommend USSF take the following actions:

- Create a clear vision between acquisition and user communities as to how and when technologies should be integrated into the broader capability architecture.
- Ensure there is funding for transitioning technology to operations.
- Develop and formalize a process to incorporate warfighter feedback into acquisition decisionmaking.
- Train and familiarize acquisition professionals on tailoring the different acquisition pathways, depending on type of capability, mission, and so forth.



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