U.S. Government Efforts to Leverage Commercial Space Systems and Capabilities

for the National Academy of Sciences Space Weather Roundtable

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Key Takeaways

- Despite mandates, defense acquisition officials are not readily embracing commercial space capabilities in part due to a lack of trust in the products and providers

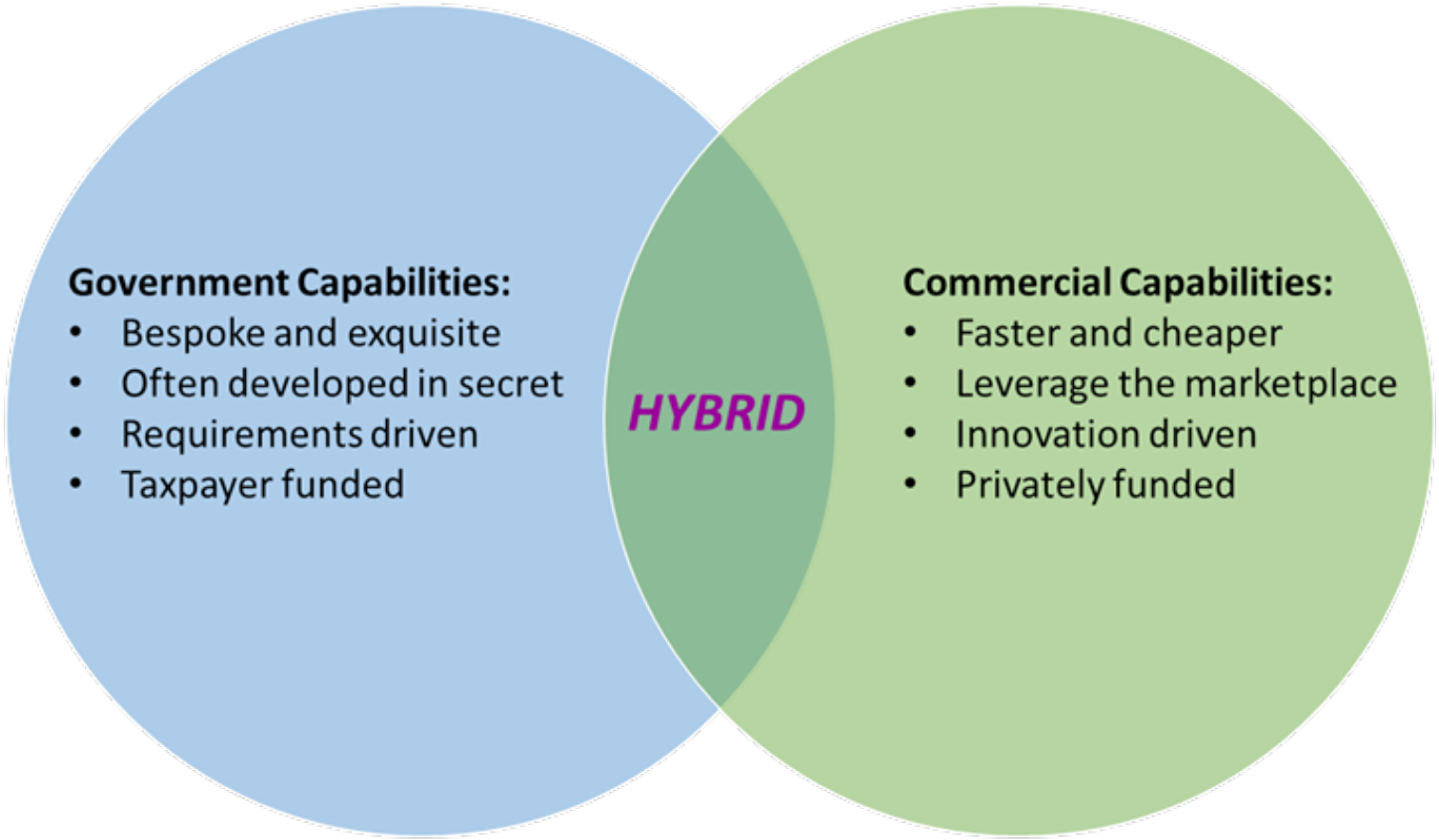
- The defense acquisition ecosystem has a dependency on cleared defense contractors who lack requirements and incentives to bid and integrate commercial tech

- Several contracting approaches show promise in speeding progress toward a truly “hybrid” space architecture that optimally integrates commercial and government developed capabilities

- Recent acquisition reforms show promise in addressing the adoption of commercial tech for national security missions

The Goal: A “Hybrid” National Security Space Architecture

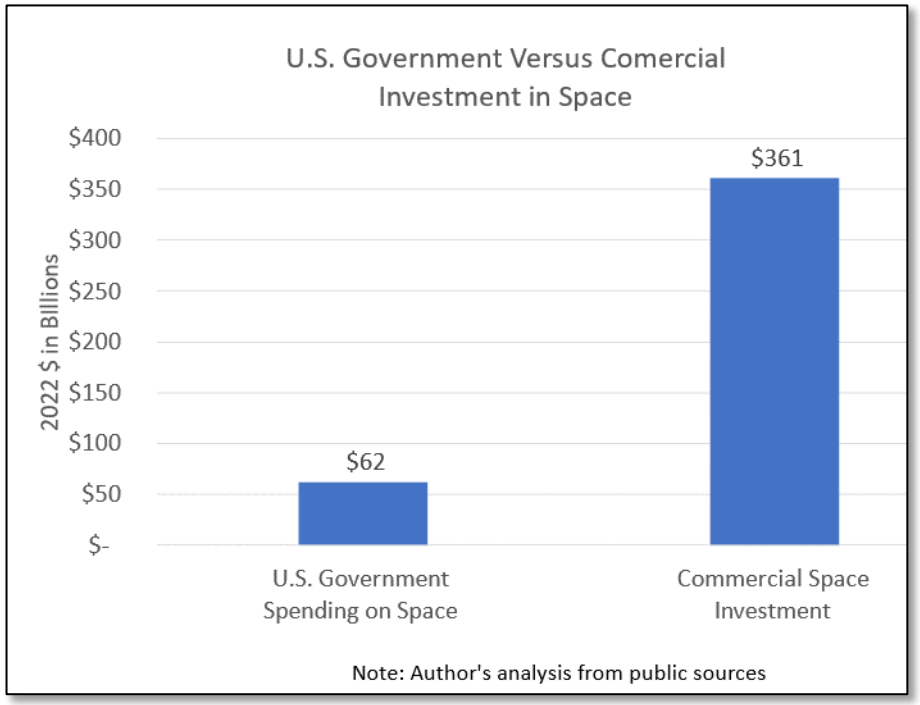
The national security “hybrid” space architecture attempts to leverage and integrate the best of government and commercial capabilities.



Why The Mandate for Commercial? 2 Key Reasons

- **TIME:** We are running out of time to field new capabilities. Chinese advances in space and counterspace threaten the long-held U.S. monopoly on advanced space capabilities, but traditional government acquisition methods and timelines do not address the near-term threat China poses

- **COST:** The explosion in private commercial space investment dwarfs U.S. govt. spending on space, and this source of domestic innovation must be harnessed as an element of national power



- The Defense Science Board (DSB) has been actively involved in studying and recommending improvements for Space Domain Awareness (SDA)
- A recent report focused on commercial space system access and integrity, emphasizing the need for the DoD to better integrate commercial space capabilities into national security space architectures.
- The panel found that while the department appears to recognize the utility of commercial capabilities, its own bureaucracy and culture often gets in the way of adopting them.

What Is To Be Done?

- Accept that our trusted cleared defense contractors are instrumental in our acquisition ecosystem and focus on incentives for aggressive exploitation of commercial (or any non-traditional) space tech

- Although we mandate commercial tech, there are no *requirements* for it. Pilot contractual incentives for aggressive schedule and cost improvement on Programs of Record (if commercial doesn't provide cost, schedule, or performance gains then it shouldn't be acquired)

- 3 contract types provide options to incentivize primes: OTAs; hybrid fixed price with a cost-plus clin for commercial experimentation; and fixed price award fee for schedule performance are discussed.

Backup slides

Models for Commercial Integration

Increasing order of priority →

Business Combinations

Example:

Defense firms acquiring commercial businesses

Services

Example:

Commercial Satellite communications

Products

Example:

Microsoft Office 365

Technologies

Example:

Satellite buses

Cleared Defense Contractors adapting and exploiting commercial technology is the easiest way to achieve a hybrid space architecture *and* industrial base

Top Reasons Defense Buyers Don't Trust Commercial

- *I don't know the company's leaders or its Board of Directors*
- *Not sure if the commercial firm will be around in the future*
- *Not sure who their critical suppliers are or the integrity of their supply chains*
- *We don't have access to their software source code/algorithms*
- *Can't assess where they got their capital*
- *No visibility into their cybersecurity posture*
- *We don't know if their workforce can be trusted*

*The concerns listed above are negated when doing business with a cleared defense contractor…

An Alternative Title...

The term "Valley of Death" refers to a perilous stage in the innovation process where promising technologies or startups struggle to secure funding or transition to the next phase of development, often leading to failure.

It's a metaphor for the gap between research and development and successful commercialization or implementation. This concept is particularly relevant in the context of military and defense acquisitions.