



Ronald Reagan  
INSTITUTE

March 2026

Center for Peace Through Strength  
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“We’re leading a revolution in technology, we’re pushing back the frontiers of space, and if we give our workers the tools they need—in industries old and new—give American workers the proper tools, and they can outproduce, outcompete, and outsell anybody, anywhere in the world.”

*President Ronald Reagan* || *Remarks at a Reagan-Bush Rally in Boston, Massachusetts, November 1, 1984*



# Ronald Reagan

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# Introduction

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The conversation about technological superiority in the era of strategic competition has led to major reforms and new initiatives aimed at leveraging America's innovation edge. But as the concept of the National Security Innovation Base (NSIB) gained prominence in recent years, there was no way to assess the impact of those reforms and initiatives. The NSIB Report Card, published by the Reagan Institute's Center for Peace Through Strength, fills that gap. It has become an authoritative and anticipated annual evaluation of the national security innovation ecosystem. Now in its fourth year, the NSIB Report Card is revealing important trends: where we are improving, where we are regressing, and where we are standing still—and therefore, falling further behind.

The NSIB ecosystem includes government agencies and actors, research laboratories, universities, innovative private sector firms, investors, and global allies and partners. The common purpose and coordinated efforts of these key stakeholders are vital to sustaining our competitive advantage and achieving U.S. national security objectives. This Report

Card measures the health, effectiveness, and resilience of the NSIB ecosystem and proposes recommendations for improvement.

As America's adversaries continue cooperating to undermine U.S. interests, the dynamism of the American private sector remains the engine of U.S. innovation. On the government side, leaders in Washington have mobilized to better leverage our innovation ecosystem for U.S. national security goals. Now, the building blocks are in place to deliver systemic transformation and modernize capabilities at speed and scale. But significant hurdles remain, with public sector inefficacy on coordination, funding, and procurement hindering progress toward technological superiority—even as the People's Republic of China continues to outproduce the United States.

The United States has everything it needs to secure its military, economic, and technological superiority: a free and open political system that empowers its best and brightest to innovate, a prosperous economic base, and a military that is the envy of the world. The trends identified in

this report card highlight both sources of strength and glaring areas of weakness that whittle away at America's advantage and provide openings for its adversaries. The pace and gravity of global competition demands decisive action to address points of vulnerability and mobilize the full potential of American innovation. With new leadership prioritizing working with industry, the rules of the game have been rewritten. Together, the NSIB ecosystem must sustain this progress to create actionable change.

As knowledge partners for the Reagan Institute's NSIB Report Card, McKinsey & Company provided the fact base to support this assessment, and Eric Snelgrove consulted as a subject matter expert. The Advisory Board, composed of bipartisan and cross-sector national security stakeholders, provided invaluable input and feedback to shape the assessment, findings, and recommendations. The analysis was also informed by a series of interviews with current and former leaders from both the public and private sectors. We hope this report card serves as a useful policy tool for actors across the NSIB ecosystem.

# Methodology

## Structured, Repeatable Approach

1. Identify the set of indicators that are most diagnostic for assessing the health of the NSIB
2. Formulate key assessment questions and criteria to evaluate each indicator
3. Develop set of key metrics to measure each criterion
4. Assign grading for criteria and indicators based on comprehensive fact base
5. Generate recommendations for improvement
6. Update indicators, fact base, and grades on an ongoing basis

## Grading Rubric

- A** Best-in-class performance globally that lives up to U.S. potential; critical source of American distinctiveness
- B** Multiple key areas of strength, with some room for growth
- C** Vulnerabilities and/or inconsistencies identified, with flat-to-declining trendline
- D** Ongoing major vulnerabilities that are significantly undermining health of the NSIB
- F** Catastrophic area of weakness that will have major implications for American technical, military, and/or economic leadership, if unaddressed

**Trendline** Performance evolution against March 2025 NSIB Report Card

⬆ Improving

↔ Neutral/flat

⬇ Deteriorating

NSIB Report Card grades represent a holistic baseline assessment that incorporates the quantitative and qualitative analysis underlying each indicator while also (where appropriate) benchmarking performance against U.S. potential and/or the performance of other countries. Annual reports measure improvement and/or deterioration from the prior year’s report card—as well as lack of substantive change, which may translate to a lower grade relative to the prior year.

# NSIB Report Cards: Key Takeaways Over Time

2023



**Clear customer and modernization misalignment**

Broad agreement that **the need for faster NSIB reform** has not translated into execution, as **misaligned incentives, weak coordination, and unclear paths** to programs of record leave the U.S. with a **rapidly closing window to act**.

2024



**Breakthroughs aren't breaking through**

Despite **pockets of progress**, U.S. national security innovation remains **stuck at an inflection point**, where **poor customer clarity, weak modernization, and structural barriers** prevent promising advances from scaling into fielded capabilities.

2025



**A chance for bold leadership**

As complexity of threat environment and **pace of global competition reach fever pitch**, new leadership in Washington has an **opportunity to move faster** and **be bolder** to address challenges.

2026



**Building blocks for transformation**

New leaders have laid the **building blocks for systemic defense transformation** this year, but progress will depend on whether stated intent translates into **durable budget authority, contracting and acquisition behavior changes, and scaled execution**.

## Key Takeaways: 2026 NSIB Report Card

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### **New leaders have laid the building blocks for transformation**

- Stronger demand signals (e.g., acquisition reform, AI strategy, reducing duplicative programs)
- Focus on faster, output-driven production and procurement of capabilities
- FY26 defense budget exceeds \$1T with passage of reconciliation bill and defense, with calls for increased topline of \$1.5T in FY27
- Refined critical technology priorities emphasize a commercial-first acquisition and investment approach

### **Pockets of DIB are transforming, but real progress remains limited**

- Disruptors continue to build momentum across autonomy, sensing, munitions, space, AI
- Select cases of DIB innovating ahead of demand, but stronger USG signaling is needed
- DIB is beginning to invest in manufacturing capacity, but talent and infrastructure gaps remain
- Supply chain is beginning to rebuild across critical raw materials, energetics

### **Systemic transformation requires infusion of capital and overcoming structural hurdles**

- Institutional private capital entering defense at industrial scale, and PE/VC flows continue to accelerate, though concentrated in downstream applications
- Ongoing political turmoil (e.g., CRs, government shutdowns) threatens stability and signaling
- Federal budget allocation is misaligned, with less than 1% of Pentagon contract dollars going to defense tech
- Production and scaling of modernized capabilities remains slow and limited

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*New leaders have laid the building blocks for systemic defense transformation this year, but progress will depend on whether stated intent translates into durable budget authority, contracting and acquisition behavior changes, and scaled execution.*

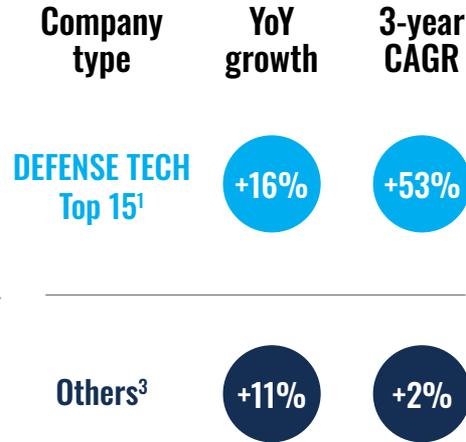
# Key Chart: Pentagon spending on defense tech has doubled but still accounts for less than 1% of total contract dollars

Pentagon Obligated Dollars to Defense Tech and Others (2023-2025, \$B)



% of total pentagon obligations

	FY23	FY24	FY25
<b>DEFENSE TECH<sup>1</sup></b>	<b>0.4%</b>	<b>0.8%</b>	<b>0.8%</b>
<b>TOP 3<sup>2</sup></b>	<b>0.3%</b>	<b>0.7%</b>	<b>0.7%</b>
<b>OTHERS<sup>3</sup></b>	<b>99.6%</b>	<b>99.2%</b>	<b>99.2%</b>



- Top defense tech companies are increasingly capturing funding obligations, doubling market share from 0.4% to 0.8% between FY23 & FY25—however, this still represents less than 1% of total contract dollars.
- The top 3 defense tech companies (SpaceX, Palantir, Anduril) have a greater combined market cap than the top 5 primes combined despite accounting for 0.7% of total Pentagon obligated dollars.
- Disruptor funding remains overwhelmingly concentrated in top 3 companies, accounting for 84% of total defense tech funding in FY25.

1. Top 15: Major defense tech companies: SpaceX, Palantir, Anduril, Saronic, Sierra Space, Astranis, Castelion, Shield AI, Skydio, Applied Intuition, Cerebras, Dataminr, Scale AI, Vannevar Labs, Hadrian 2. Top 3: SpaceX, Palantir, Anduril 3. Others: Includes defense primes, engineering services providers, and any other Pentagon contractors

# Overview of Recommendations

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## CHALLENGES TO ADDRESS

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### Lack of multi-year demand signals

## HOW TO IMPROVE

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### Strengthen the government's demand signal so private capital and industry can scale with confidence

- Expand Advance Market Commitments (AMCs) to create predictable, multi-year procurement signals
- Modernize budget and acquisition data systems to increase transparency and execution accountability
- Reduce uncertainty caused by annual appropriations volatility

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### Slow scaling pathways at home and with allies

### Streamline how innovation moves from development to deployment and export

- Digitize and fast-track FMS/DCS processes to meet allied demand at speed
- Enable iterative delivery and multi-country licensing models
- Prioritize and resource Edge AI for contested environments to ensure operational relevance

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### Inadequate infrastructure and workforce for scaling

### Strengthen the foundational inputs and industrial base required for sustained advantage

- Launch a national defense manufacturing apprenticeship pipeline
- Accelerate the standup of a nationwide network of shared commercial classified facilities
- Align labs, FFRDCs, and UARCs to uniquely governmental gaps and accelerate transition relevance

Additional recommendation details on pages 36–37



## Definitions of Key Indicators

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### “Outputs” of a Strong NSIB Ecosystem

- 1 Defense Modernization** Translation of innovation into national security capabilities with production at speed and scale through agile acquisition models
- 2 Innovation Leadership** Overall quality of U.S. research and commercialization in priority technologies and status as a center of global knowledge networks
- 3 Pull-Through for Broader National Priorities** “Multiplier” effect of NSIB on broader economy and government effectiveness

### “Inputs” Driving U.S. National Security Innovation

- 4 Customer Clarity** Demand signal for customer (government) innovation priorities, including funding and acquisition pathways to match the aspiration
- 5 Innovation Capital** Holistic set of public and private financial capital—along with non-financial assets and infrastructure—available to resource the NSIB
- 6 Private Sector Innovator Base** Broad-based, self-innovating, forward-leaning ecosystem of traditional defense firms, startups, and commercial hyperscalers engaged in NSIB-relevant efforts
- 7 Public and Civil Innovation Base** Defense/national labs, other FFRDCs/UARCs, and academic institutions developing (and protecting) national security-oriented research
- 8 Manufacturing Capacity and Industrial Base** Resilient, innovative production base and infrastructure that enables innovators to deliver on NSIB modernization and other strategic priorities
- 9 International Alliances and Partnerships** Level of linkage between U.S. and international partners (e.g., IP rights, data sharing)
- 10 Talent Base** Pipeline of domestic and foreign-born talent trained and working in NSIB-relevant fields across the public and private sector

## Grading Overview

	Indicator	2024 Grade	2025 Grade	2026 Grade	Trend	Grading Rationale
Outputs	1. Defense Modernization	D	D	D	→	Defense modernization continues at a slow pace with pockets of disruptive capabilities emerging within select services (e.g., Army & Space Force). Major program misses across the services continue to hamper broader modernization efforts. Innovative procurement approaches are gaining traction; however, concerns persist around the Pentagon's ability to deliver at scale and speed using new pathways (e.g., delays for MTA and MDAP programs).
	2. Innovation Leadership	A-	A-	B+	↓	The U.S. maintains status as a global leader in innovation; however, China is rapidly closing the gap in critical areas, including next-generation telecommunications and AI. China has seen a boom in high-quality research output, with Chinese research universities quickly climbing global rankings amid Chinese institutions outpacing U.S. institutions in quality research output.
	3. Pull-Through for Broader National Priorities	B	B	B	→	U.S. defense spending remains steady as a share of GDP, reinforcing economic growth. The Pentagon is leaning into innovation, crowding in private capital for semiconductors and next-gen energy resilience, but cross-agency collaboration remains low. DOGE generated savings, though reinvestment plans remain unclear.
Inputs	4. Customer Clarity	D	D+	B-	↑	The Pentagon's modernization intent is clear and backed by renewed spending commitments with supplemental reconciliation funding and FY26 defense appropriations, as well as calls for a \$1.5T FY27 budget. SECWAR's "Acquisition Transformation Strategy" reinforces a deliberate push for faster, output-driven acquisition. Still, execution is constrained by appropriations delays, stop-gap funding, and limited visibility from appropriation to obligation.
	5. Innovation Capital	B	B+	B+	→	Private capital pools continue to grow with surge in VC, PE, and emerging scaled investments from institutional investors. While the U.S. continues to lead gross R&D expenditures globally and funding for Pentagon is projected to grow, funding for NSF and NASA—which support core NSIB priorities and basic research—is projected to decline and unlikely to be offset by private investment.

## Grading Overview

Indicator	2024 Grade	2025 Grade	2026 Grade	Trend	Grading Rationale
6. Private Sector Innovator Base	B	B+	A-	⬆️	Dual-use and non-traditional players are expanding their footprint, capturing a small but growing share of Pentagon obligations (<1%) while channeling capital into scaling production. Investor confidence in defense tech is at an all-time high as disruptors deepen partnerships with primes and peers. Innovators are deploying internal R&D capital ahead of confirmed Pentagon demand.
7. Public / Civil Innovation Base	C+	C	C-	⬇️	The U.S. remains the global leader in public R&D, but inflation-adjusted spending has stagnated since 2010, with China narrowing the gap. The Pentagon has sharpened research alignment through challenge-based awards, but cuts to basic research threaten long-term capability. Escalating state-backed cyber intrusions further heighten the need for stronger IP protection.
8. Manufacturing Capacity and Industrial Base*	--	D	D+	⬆️	The U.S. is moving to increase defense manufacturing throughput, from critical mineral sourcing and refinement to advanced manufacturing and footprint expansion. Public and private capital are scaling production across the stack, but structural fragilities remain—particularly in sub-tier supply chains.
9. International Alliances and Partnership	C	C	C-	⬇️	While the U.S. is pursuing global defense innovation and collaboration on NSIB priorities through new partnerships, tangible progress on implementation has been limited (e.g., AUKUS) amid concerns surrounding the efficacy of joint-efforts (e.g., NATO Innovation Fund). Pledges from NATO allies to increase defense spending and meet capability targets bring potential for deeper partnership across defense tech priorities.
10. Talent Base	D	C-	D+	⬇️	Significant work remains to rebuild the A&D talent base: 1.9M manufacturing jobs will go unfilled through 2033, 29% of the A&D and NSIB workforce is nearing retirement, and turnover runs 4x the national average. AI-enabled productivity tools and advanced manufacturing will help, but persistent talent attraction issues and new restrictions on international STEM recruitment pose an existential risk to production ramps and long-term innovation.

Inputs

\*This was a new indicator in the 2025 NSIB Report Card



# 1. Defense Modernization

OVERALL GRADE: **D** TREND:

*Translation of innovation into national security capabilities with production at speed and scale through agile acquisition models*

TAILWINDS HEADWINDS

## Summary

Defense modernization continues at a slow pace with pockets of disruptive capabilities emerging within select services (e.g., Army & Space Force). Major program misses across the services continue to hamper broader modernization efforts. Innovative procurement approaches are gaining traction; however, concerns persist around Pentagon's ability to deliver at scale and speed using new pathways (e.g., delays for MTA and MDAP programs).

## At a glance...

**18**

**Additional months needed to deliver initial capabilities to major programs**

**23%**

**Of 22 reviewed MDAPs planned to or had created a minimum viable product**

**10%**

**Frontline effectiveness of U.S. drones vs. 90% for Ukrainian drones**

## What Happened in 2025

- CDAO rolled-out GenAI.mil to 3M+ service personnel to augment unclassified productivity amid announcement of 7 AI pace-setting-projects (PSPs)
- Big Beautiful Bill injected \$150B in funding across core NSIB priorities (e.g., +24% growth in autonomous, +72% growth in hypersonics) for 2 years
- Production and scaling of modernized capabilities remains slow and limited
- Avg. timeframe to deliver major programs increased by 18 months since 2024 to an avg. of 12 years
- U.S. struggling to match drone capabilities demonstrated in Russia-Ukraine war with Ukrainian drones being more effective and 16-160x less expensive

## What we're looking for in 2026

- Rapid fielding of capabilities funded in FY25 (e.g., UAS, hypersonics, low-cost precision munitions)
- Implementation of acquisition reform laid out in FY25

# Criteria Details

Criteria Grades	Datapoints since last report card
<p><b>D</b> </p> <p><b>1.1: NSIB innovations are converted into modernized U.S. national security capabilities.</b></p>	<ul style="list-style-type: none"> <li><b>+ Department introducing new capabilities across select services:</b> <ul style="list-style-type: none"> <li>• Air Force: High Accuracy Detection &amp; Exploitation (HADES) jets operational;<sup>1</sup> B-21 program continues to advance through prototyping ahead of mfg. ramp<sup>2</sup></li> <li>• Space Force: First launch of 21 PWSA T1 satellites for low-latency communication to support advanced missile warning and tracking<sup>3,4</sup></li> <li>• Army: Fielding low-cost 3D-printed attritable drones to TIC units;<sup>5</sup> first LRHW battery rounds delivered to brigade combat team in December 2025<sup>6,7</sup></li> <li>• Broader defense: Coast Guard expanding V-BAT to nearly every ship class;<sup>8</sup> DHS deploying Army systems along border for surveillance &amp; sensing<sup>9</sup></li> </ul> </li> <li><b>— Big program misses and cancelations continue to delay defense modernization across services:</b> <ul style="list-style-type: none"> <li>• Army: M10 Booker canceled after \$1.1B+ in development costs over last 5 years<sup>10</sup></li> <li>• Navy: Hypersonic Air-Launched Offensive (HALO) canceled due to rising cost concerns<sup>11</sup></li> <li>• Air Force: Block-4 F-35 average delivery delays increased from 61 days in 2023 to 238 days in 2024<sup>12</sup></li> </ul> </li> </ul>
<p><b>C-</b> </p> <p><b>1.2: U.S. effectively adopts these capabilities through modernized models for acquisition.</b></p>	<ul style="list-style-type: none"> <li><b>+ DIU continues to prototype and field dual-use tech:</b> Advanced Nuclear Power for Installations (ANPI) program launched in 2024, 8 commercial companies eligible for OTAs in 2025 with a goal of 2 reactors by 2030;<sup>13</sup> launched Transition of Quantum Testing (TQS) which went from award to execution in &lt;6mo's<sup>14</sup></li> <li><b>+ OTA spend resilient through administration transition:</b> Pentagon awarded \$17.7B in OTA contracts in FY25, down 4% from FY24 (\$18.5B), driven by a Q2 FY25 slowdown; however, OTA dollars tend to flow to consortiums that provide incomplete data, muddying full assessment of OTA program outcomes<sup>15,16</sup></li> <li><b>+ Services have established initiatives to get COTS capabilities into warfighter hands faster:</b> Army's Transformation-in-Contact (TIC) is facilitating testing of next-gen equipment in live training environments, allowing for faster capability integration and acquisition decisions<sup>17</sup></li> <li><b>— U.S. taking steps to modernize procurement, full impact not yet realized:</b> FoRGED Act plans to hand prototyping and acquisition power to COCOMs, requiring COTS solutions to be tested prior to procurement; SPEED Act would shrink acquisition timeline from ~26 months to ~5 months by creating a new committee (RAPID) with 60 days to assess cost and feasibility<sup>18</sup></li> <li><b>— MTA and MDAP pathways are struggling to deliver:</b> 7 former MTA programs entered pathway with low tech maturity, none were production-ready at program conclusion; only 23% of reviewed MDAPs had an MVP and only 10% of reviewed MTAs tested an integrated fully digital prototype in an operational environment<sup>19</sup></li> </ul>
<p><b>D-</b> </p> <p><b>1.3: U.S. effectively produces modernized capabilities at speed and scale.</b></p>	<ul style="list-style-type: none"> <li><b>+ Department continues to scale modernized capabilities:</b> Blue UAS moved from DIU to DCMA to further expedite NDAA compliance for latest commercial UAS systems;<sup>20,21</sup> DIU, AFRL, and AFWERX launching Blue Manufacturing to help advanced manufacturing companies reach scale;<sup>22</sup> Pentagon's Drone Dominance intends to purchase 200,000 low-cost consumer drones by 2027; <sup>23,24</sup> LUCAS drone went from concept to fielding in less than 18 months<sup>24</sup></li> <li><b>+ Pentagon beginning to deploy AI capabilities at scale:</b> Pentagon announced 7 PSPs led by CDAO to accelerate AI adoption,<sup>25</sup> including GenAI. mil, which leverages leading-frontier LLMs to provide department-wide, IL-5-compliant, generative AI licensing;<sup>26,27</sup> Advana separated into 3 programs amid surging demand<sup>28</sup> (e.g., GAMECHANGER user growth);<sup>29</sup> War Data Platform (data integration), WDP Application Services (rationalizing application environments), Advana for Financial Management (audit support)<sup>28</sup></li> <li><b>— U.S. drone capabilities lag Ukrainian capabilities:</b> American drones continue to be ineffective on the front-lines, Ukrainian drones are 16-160x less expensive and have drastically higher battlefield success rates (90% vs. 10% for US-made)<sup>30,31</sup></li> <li><b>— Risk-averse acquisition culture continues to hamper progress:</b> Average timeframe to deliver initial capabilities for major defense programs increased by 18 months in 2024, from 10 years to nearly 12 years<sup>32,33,34</sup></li> </ul>



## 2. Innovation Leadership

OVERALL GRADE: **B+** TREND:

*Overall quality of U.S. research and commercialization in priority technologies and status as a center of global knowledge networks*

TAILWINDS HEADWINDS

### Summary

The U.S. maintains status as a global leader in innovation; however, China is rapidly closing the gap in critical areas, including next-generation telecommunications and AI. China has seen a boom in high-quality research output, with Chinese research universities quickly climbing global rankings amid Chinese institutions outpacing U.S. institutions in quality research output.

### At a glance...

**8**

**Of the top 10 global research institutions on the 2025 Nature Index are Chinese**

**60%**

**China's lead over U.S. in respective share of top decile publications on hypersonic detection and tracking**

**50%+**

**More 6G patents filed by China than by the U.S.**

### What Happened in 2025

- U.S. continues to lead in number of notable machine learning models (40) & global quantum compute race
- U.S. is promoting global adoption of its AI tech stack, U.S. hardware powers >90% of Chinese LLMs
- China leads in high-quality scientific publications for advanced materials and hypersonic detection
- China continues to lead in global standards for 5G technology and innovation
- Chinese institutions (i.e., universities and other research entities) rank higher globally, and are increasingly conducting defense research

### What we're looking for in 2026

- Growth in U.S. technological lead (e.g., AI, quantum)
- Adoption of U.S. AI tech stack globally through ITA's new AI American Exports program
- Output-driven, unified R&D strategy

# Criteria Details

Criteria Grades	Datapoints since last report card
<p><b>B</b> </p> <p><b>2.1: U.S. leads knowledge output based on key indicators (e.g., patent volume/quality). America defines global tech standards and governance frameworks.</b></p>	<ul style="list-style-type: none"> <li><span style="color: green;">+</span> <b>U.S. continues to lead in notable machine learning models, but gap closing:</b> U.S. leads with 40 notable AI models, followed by China with 15, and Europe with 3; however, Chinese models are improving (performance gap against U.S. models was 1.7% in 2025, vs. 9.3% in 2024) and accelerating in development (e.g., Alibaba was a top 3 contributor with 6 notable models, behind 7 each for Google and OpenAI);<sup>1</sup> China outpacing U.S. in AI adoption (e.g., 60% of employees using AI weekly compared to 37% in the U.S.), with 90% integration target across key sectors by 2030<sup>2</sup></li> <li><span style="color: green;">+</span> <b>U.S. maintains global leadership in quantum computing, but lags others in select areas:</b> <ul style="list-style-type: none"> <li>• U.S. leads in number and diversity of quantum processing units (QPUs), as well as the number of published research (2019-2023), with 104 published reports vs. China's 61;<sup>3</sup> U.S. continues to lead in supercomputing systems with 175 vs. China's 47;<sup>4</sup> however China's participation in rankings has been decreasing<sup>5</sup></li> <li>• DARPA advanced 11 companies to Stage B of its Quantum Benchmarking Initiative (QBI), marking a shift toward technical validation,<sup>6</sup> including Dirac, which develops utility-scale quantum architecture using existing chip fabrication technology<sup>7</sup></li> <li>• China holds technological edge in specific areas of quantum such as communications, holding 39% of total publications vs. the U.S.' 12%;<sup>3</sup> however, U.S. leads with 34% of the most highly cited quantum computing publications<sup>3</sup></li> </ul> </li> <li><span style="color: green;">+</span> <b>U.S. promoting global adoption of American AI technology stack:</b> EO establishes the American AI Exports Program—managed by the International Trade Association (ITA)—to develop and deploy U.S. full-stack AI export packages globally; includes coordination with Small Business Administration's Office for development of AI infrastructure, hardware, and Department of State for foreign service officers and ambassadors<sup>8</sup></li> <li><span style="color: red;">-</span> <b>U.S. continues to trail in 5G/6G standards but is ramping up efforts to bridge the gap:</b> China holds 6,001 6G patents compared to U.S.' 3,909;<sup>9</sup> the Patent Asset Index, a measure of innovative strength of a patent portfolio, ranks Qualcomm ahead of Huawei in 5G patents families granted; however, Huawei leads in overall 5G patents filed and granted<sup>10</sup></li> <li><span style="color: red;">-</span> <b>China is rapidly accelerating pharmaceutical development:</b><sup>11,12</sup> China leads in number of clinical trials and is on pace to reach 35% of global clinical trials by 2040;<sup>12</sup> the value of drugs licensed from China to the West has surged to \$48B in 2024, 15 times higher than in 2020<sup>13</sup></li> </ul>
<p><b>B+</b> </p> <p><b>2.2: U.S. is a net knowledge exporter (e.g., global citations, research university rankings).</b></p>	<ul style="list-style-type: none"> <li><span style="color: red;">-</span> <b>China surpasses U.S. in quality scientific publications:</b> China leads in the top decile of high-quality scientific publications across critical domains, with a &gt;50% share lead over the U.S. in subfields like nanoscale materials, electric batteries, hypersonic detection and tracking<sup>14</sup> <ul style="list-style-type: none"> <li>• U.S. holds greater share of top 10% publications in select subfields (e.g., quantum computing, small sats, genetic engineering)<sup>14</sup></li> <li>• China's share of top 10% quality publications for hypersonic &amp; tracking publications is 60 p.p. higher than the U.S.' share<sup>14</sup></li> <li>• China may continue to increase its lead in publications as it expands defense-related research contracts in critical tech areas to further improve resourcing for universities (e.g., 55 Chinese universities won at least two AI-related contracts)<sup>15</sup></li> </ul> </li> <li><span style="color: red;">-</span> <b>China outpacing U.S. institutions in scientific research quality and output:</b> <ul style="list-style-type: none"> <li>• China leads globally in research output, with 42 universities ranked among the top 100, ahead of the U.S. (36) and the UK (4)<sup>16</sup></li> <li>• Of the top 10 research institutions according to the 2025 Nature Index (measures research output across high-quality scientific journals), 8 are Chinese; Chinese Academy of Sciences ranked first, followed by Harvard in second<sup>17</sup></li> <li>• U.S. retains a strong foothold in corporate research output, with six U.S. based companies in the top 10 while China only has one<sup>17</sup></li> </ul> </li> </ul>



### 3. Pull-Through for Broader National Priorities

*“Multiplier” effect of NSIB on broader economy and government effectiveness*

OVERALL GRADE: **B** TREND:

TAILWINDS HEADWINDS

#### Summary

U.S. defense spending remains steady as a share of GDP, reinforcing economic growth. The Pentagon is leaning into innovation, crowding in private capital for semiconductors and next-gen energy resilience, but cross-agency collaboration remains low. DOGE generated savings, though reinvestment plans remain unclear.

#### At a glance...

**5.4%** Growth in A&D contribution to U.S. GDP

**\$600B** Pledged in private investment from ~130 companies for U.S. semis & electronics manufacturing

**\$1.5B** Allocated to OSC by Big Beautiful Bill

#### What Happened in 2025

- SBA expanded first round of SBICCT awardees, supporting 15 states and DC
- U.S. government bolstering critical tech output through CHIPS, Genesis, and increased OSC lending authority
- Department expanding advanced nuclear energy development through Project Janus
- Early-stage national security funding diminished through the lapse of SBIR funding
- Limited documented impact on increasing cross-government collaboration per FY25 National Defense Industrial Strategy Implementation Plan (NDISIP)

#### What we’re looking for in 2026

- Increased output resulting from 2025 OSC funding
- Documented increase in cross-governmental collaboration
- Early outputs from Genesis Mission & Janus Program

# Criteria Details

Criteria Grades	Datapoints since last report card
<p><b>B+</b> </p> <p><b>3.1: NSIB innovation improves American economic and competitiveness outcomes.</b></p>	<ul style="list-style-type: none"> <li> <b>A&amp;D contribution to nominal GDP rises, but share consistent:</b> A&amp;D’s total contribution to nominal GDP rose +5.4% from 2023 to 2024 to \$443B<sup>1</sup> (greater than the 2% increase from 2022 to 2023),<sup>2</sup> but share of nominal GDP was consistent at 1.5%<sup>1</sup> (1.6% in 2023);<sup>2</sup> A&amp;D accounts for 1.4% of U.S. workforce with salaries 56% higher than the national average<sup>1</sup> (previously 50% higher)<sup>2</sup></li> <li> <b>U.S. government semiconductor investments continuing to benefit broader economy:</b> CHIPS Act resulted in semiconductor companies announcing 130+ projects<sup>3</sup> (up from 90+ in 2024)<sup>4</sup> across 28 states now totaling over \$600B in private investment<sup>3</sup> (up from \$450B in 2024)<sup>4</sup> for U.S. semiconductors and electronics manufacturing, creating &gt;500,000 American jobs; Department of Commerce announced \$32.5B in grant awards and \$5.9B in loans to 32 companies across 48 semiconductor projects,<sup>3</sup> in addition to taking an \$8.9B equity stake in Intel<sup>5</sup></li> <li> <b>Pentagon expands advanced nuclear energy development:</b> Following EO 14299,<sup>6</sup> Army announced JANUS Program to build commercial microreactors in-partnership with commercial providers and DIU across 9 sites amid expanding need for resilient energy production<sup>7,8</sup></li> <li> <b>SBIR/STTR drives economic impact:</b> Since 2020, top 25 awardees have generated \$1.5B in commercialization contracts, frequently leading to acquisition by larger firms, while producing outputs across priority sectors (e.g., 12% of new drug approvals)<sup>9</sup></li> <li> <b>OSC lending authority scaling to improve security and economic resilience:</b> The Big Beautiful Bill allotted \$1.5B to the Office of Strategic Capital (OSC), enabling OSC to lend out \$200B over four years<sup>10</sup> to improve economic chokepoints (e.g., reliance on foreign suppliers for rare earth metals and magnets) and support production of critical tech areas<sup>11</sup></li> <li> <b>Genesis Mission established:</b> Executive Order 14363 directs DOE and national lab system to accelerate scientific discovery leveraging AI; the initiative is still in its very early stages, but its stated goal is to double U.S. scientific productivity over next 10 years is ambitious<sup>12,13</sup></li> <li> <b>Legislation pushing for broader industrial policy focused on winning across key sectors:</b> NDAA establishes Civil Reserve Manufacturing Network (CRMN) to remove the red tape between commercial companies and the DIB (e.g., \$177M for qualification and testing expediting)<sup>14,15</sup></li> <li> <b>Early-stage national security funding diminishes:</b> Senate failed to pass a bill that would have extended the Small Business Innovation Research (SBIR) program, leading to the program’s lapse during the government shutdown<sup>16</sup></li> </ul>
<p><b>C</b> </p> <p><b>3.2: NSIB innovation advances government efficiency/effectiveness across non-defense priorities.</b></p>	<ul style="list-style-type: none"> <li> <b>Small Business Administration (SBA) expands licensed and Green Light Approved funds for Small Business Investment Company Critical Technology (SBICCT) Initiative:</b> Pentagon published the names of 18 funds<sup>17</sup> (expanded from 13 in 2024)<sup>18</sup> expected to invest &gt;\$4B<sup>17</sup> (up from \$2.8B in 2024)<sup>18</sup> across 1,700 portfolio companies<sup>17</sup> (previously 1,000),<sup>18</sup> focusing on critical technology areas<sup>17</sup></li> <li> <b>Defense initiatives strengthening other critical sectors:</b> ROK’s \$150B investment fund and Hanwha’s infrastructure commitments for Philadelphia Shipyard to upskill U.S. shipbuilding personnel, boost LNG export capabilities, and introduce robotic welding<sup>19</sup></li> <li> <b>DOGE provided savings, but reallocation of savings still unclear:</b> Pentagon and DOGE proposed an 8% budget cut target over each of the next five years (\$50B per year)<sup>20</sup> to be executed with the support of AI;<sup>21</sup> by August, DOGE announced \$13.8B in savings (AEI analysis attributed \$11.1 billion to DOGE); however, long-term impacts and where savings could be reinvested remain unclear<sup>22</sup></li> <li> <b>Limited documented progress on increasing cross-government collaboration via FY25 National Defense Industrial Strategy Implementation Plan:</b> Partnership opportunities identified in the plan (e.g., Departments of Commerce, Energy, Justice, State, and Treasury collaboration across production and supply chain, cybersecurity) have shown limited demonstrated progress (e.g., no follow-up announcements or explicit outcome metrics tracked yet)<sup>23</sup></li> </ul>



## 4. Customer Clarity

OVERALL GRADE: **B-** TREND:

*Demand signal for customer (government) innovation priorities, including funding and acquisition pathways to match aspiration*

TAILWINDS HEADWINDS

### Summary

The Pentagon’s modernization intent is clear and backed by renewed spending commitments with supplemental reconciliation funding and FY26 defense appropriations, as well as calls for a \$1.5T FY27 budget. SECWAR’s “Acquisition Transformation Strategy” reinforces a deliberate push for faster, output-driven acquisition. Still, execution is constrained by appropriations delays, stop-gap funding, and limited visibility from appropriation to obligation.

### At a glance...

<b>\$839B</b>	Base discretionary defense funding for FY26
<b>\$150B</b>	Supplemental reconciliation funding for defense – \$130B for FY26
<b>14</b>	of the 15 previous years have had delayed appropriations

### What Happened in 2025

- SECWAR announced acquisition reform incentivizing agility and prioritizing capabilities over programs; established SWP, CSO, & OTAs as preferred pathways
- AI established as critical national security priority via WH AI Action Plan, EOs, and Pentagon AI Strategy
- Innovation ecosystem streamlined under CTO
- New programs using faster acquisition pathways facing ongoing delays
- CR and government shutdown hindered new awards and delayed delivery schedule for major programs

### What we’re looking for in 2026

- Elevated defense spending (e.g., \$1.5T Pentagon funding)
- Implementation of the White House AI Action Plan
- Utilization of SWP and CSO, impact on acquisition speed

# Criteria Details

Criteria Grades	Datapoints since last report card
<p><b>B+</b> </p> <p><b>4.1: U.S. gov't clearly communicates critical technology priorities needed to support national security missions.</b></p>	<ul style="list-style-type: none"> <li> <b>Pentagon consolidates innovation ecosystem under CTO control and streamlines innovation priorities:</b> DIU, CDAO, OSC, SCO, TRMC, DARPA all fall under new CTO innovation umbrella; DISG, DIWG, CTO Council replaced by single CTO Action Group (CAG); DIU and SCO designated Pentagon “Field Activities” amid deduplication effort;<sup>1,2</sup> NSS highlights AI, biotech, quantum computing as focus areas;<sup>3</sup> Pentagon consolidated previous 14 critical tech areas to 6<sup>4</sup></li> <li> <b>Administration and Department leadership codifies AI as a major development initiative:</b> White House’s AI Action Plan establishes near-term policy goals;<sup>5</sup> White House memo mandates agencies appoint chief AI officers;<sup>6</sup> DIB clarify CDAO’s role and agency collaboration<sup>7,8</sup></li> <li> <b>Armed Forces increase collaboration with commercial entities on tech priorities through streamlined offices:</b> Space Force relaunched Front Door to engage commercial entities;<sup>9</sup> CDAO Tradewinds Solutions Marketplace growing and launched SBIR/STTR Aisle;<sup>10</sup> Navy announced new Naval Rapid Capabilities Office (NARCO);<sup>11</sup> Army announced FUZE<sup>12</sup> and introduced PIT office focused on warfighter-centered tech development and integration<sup>12</sup></li> <li> <b>No future year defense plan (FYDP) in FY26 PBR:</b> No FYDP FY26 raises long-term funding questions amid surge in supplemental funding<sup>13</sup></li> <li> <b>Structural realignment causing disruptions:</b> CDAO reporting line changed twice in the last three years, decreasing clarity of the role;<sup>14,15</sup> new reporting structure aims to further CDAO alignment with DARPA under USW R&amp;E, with ~70% of DARPA programs benefiting from AI/ML technology<sup>16,17</sup></li> </ul>
<p><b>B</b> </p> <p><b>4.2: U.S. gov’t provides sufficient and stable funding to acquire and scale critical tech solutions, while making needed tradeoffs.</b></p>	<ul style="list-style-type: none"> <li> <b>CDAO deploying capital at scale and enhancing transparency across efforts:</b> CDAO providing contracts with \$200M ceilings to frontier AI companies (i.e., Anthropic, Google, OpenAI, xAD);<sup>18</sup> CDAO obligations increased ~4x to \$170M in FY25;<sup>19</sup> reallocated funds (+\$489M) to Alpha-1 Development and (+\$393M) to Software Pilot Program, providing greater visibility to CDAO programs and strengthening a joint-force AI and autonomy effort<sup>20,21</sup></li> <li> <b>Pentagon directing long-term funding for Golden Dome to stabilize demand:</b> Pentagon signed seven-year agreement with Lockheed Martin to ramp PAC-3 production;<sup>22,23</sup> Pentagon investing \$1B in L3Harris’s solid rocket motors business to accelerate production on multi-year procurement agreements<sup>24</sup></li> <li> <b>Department providing clear and definitive funding to address critical munition shortages:</b> RTX awarded five up-to-seven-year framework agreements to increase critical munitions (e.g., Tomahawk, AMRAAM, SM-6, SM-3 IB acceleration, SM-3 IIA output) by 2-4x<sup>25</sup></li> <li> <b>Government shutdown impacting critical programs:</b> Government shutdown for 43 days; no contracts awards unless designated an excepted activity during shutdown;<sup>26,27</sup> shutdown caused delays to major programs (e.g., CCA);<sup>28</sup> SBIR &amp; STTR programs lapsed;<sup>29</sup> 14 of the last 15 years have had delayed appropriations<sup>30</sup></li> <li> <b>FY26 funding allocations remain unclear &amp; reconciliation leaves long-term questions:</b> Some priorities (e.g., quantum, space systems integration) received strong discretionary funding (up 2.5x and 3.1x);<sup>21,31</sup> other priorities (e.g., space-based interceptors) received mandatory funding with no established PORs;<sup>32</sup> Golden Dome budget lacks spend plans and justification, leaving resource allocation unclear<sup>21</sup></li> </ul>
<p><b>C+</b> </p> <p><b>4.3: Acquisition pathways that operate at the speed of relevance are available and well-utilized.</b></p>	<ul style="list-style-type: none"> <li> <b>SECWAR announces “Warfighting Acquisition System”:</b> Proposes implementing portfolio acquisition executives across Pentagon with greater decision-making power, incentivizing performance through pay, and directs maximum utilization of MOSA for critical systems;<sup>33</sup> thinned contracting workforce amid Great Resignation hindering immediate implementation efforts<sup>34</sup></li> <li> <b>Continued expansion and availability of other acquisition pathways to address speed and scale:</b> <ul style="list-style-type: none"> <li>• EO 14265 mandates reform and review of defense pathways (e.g., for MDAP);<sup>35</sup> EO 14275 pushes to overhaul FAR, led to 16 legislative proposals<sup>36,37</sup></li> <li>• Pentagon established software acquisition pathway (SWP) as preferred pathway, with Commercial Solutions Openings (CSOs) and Other Transactions (OTs) as default for solicitation and awards;<sup>38</sup> Pentagon FY25-26 software modernization implementation plan updated, though impact remains to be seen<sup>39</sup></li> <li>• Pilots launched for Anything-as-a-Service programs (e.g., Mission Network-aaS);<sup>40,41</sup> nontraditional acquisition models being explored for major programs (e.g., Golden Dome prize competition)<sup>42,43</sup> and accelerated (e.g., Navy S<sup>2</sup>MARTS awarded \$1B over four years (2023), now &gt;\$3B in 2025)<sup>44</sup></li> </ul> </li> <li> <b>High CUAS cost-per-shot prompting shifts to cheaper, reusable alternatives:</b> Executive Order 14186 ordered the development of non-kinetic CUAS capabilities<sup>45</sup></li> <li> <b>New programs using faster acquisition pathways still face delays:</b> DAWG (formerly Replicator) and PWSA have attempted to increase speed and seen some progress (e.g., Project G.I., T1 launches), but are delayed, remaining in early stage while lacking transparency in results<sup>46,47,48,49</sup></li> </ul>



## 5. Innovation Capital

OVERALL GRADE: **B+** TREND:

*Holistic set of public and private financial capital—along with non-financial assets and infrastructure—available to resource the NSIB*

TAILWINDS HEADWINDS

### Summary

Private capital pools continue to grow with surge in VC, PE, and emerging scaled investments from institutional investors. While the U.S. continues to lead gross R&D expenditures globally and funding for Pentagon is projected to grow, funding for NSF and NASA—which support core NSIB priorities and basic research—is projected to decline and unlikely to be offset by private investment.

### At a glance...

**83%**

**Increase YoY in defense tech VC investment** – excluding OpenAI investment, ~164% growth when included

**2.3x**

**Increase in Pentagon defense tech funding for startups**

**3.3%**

**Projected FY26 ratio of defense spending to GDP, considerably lower than Cold War era of 9-11%**

### What Happened in 2025

- U.S. continues to lead the world with highest gross domestic expenditures on R&D with \$823B
- Pentagon alternative contracting mechanisms obligated >\$17B, a sharp increase from <\$5B five years ago
- Defense tech VC accelerating, 84% YoY investment increase and 38% YoY median deal size increase
- Budget declines for NSF (-3.4%) and NASA (-1.1%) limit early-stage research even as cuts smaller than expected
- Private capital continues to focus on late-stage innovation, unlikely to offset cuts to basic & applied R&D
- Defense VC highly concentrated; 82% of total VC investment flowed to AI and AI-adjacent companies

### What we're looking for in 2026

- Protection of basic sciences and initiatives to bridge critical technology gaps
- Private investment in Pentagon infrastructure

# Criteria Details

Criteria Grades	Datapoints since last report card
<p><b>A-</b> ↗</p> <p><b>5.1: Economy-wide R&amp;D investment is sufficient to drive desired national security outcomes.</b></p>	<ul style="list-style-type: none"> <li><b>+</b> <b>U.S. leads the world in total R&amp;D expenditure:</b> U.S. PPP-adjusted GERD in 2023 was \$823B (China in 2<sup>nd</sup> place with \$781B); from 2019 to 2023, China experienced an 8.9% average growth rate vs. the U.S.’ 4.7% (China now 96% of U.S. GERD, up from 72% in 2013)<sup>1,2</sup></li> <li><b>—</b> <b>Expected budget cuts at key agencies impacting R&amp;D efforts:</b> NSF and NASA budgets projected to decline by 3.4% and 1.1%, respectively, in FY26, following rejection of proposed reductions of 57% and 23%, respectively; R&amp;RA at NSF to decline by 14%, while Space Tech at NASA to decline by 16%; reinstatement of STEM programs is notable, though reductions in basic research can impact longer-lead research cycles<sup>3,4,5,6</sup></li> <li><b>—</b> <b>Defense spending, as a ratio of GDP, remains historically small in age of renewed great power competition:</b> FY26 defense spending is projected to be 3.3% of GDP, in line with FY25;<sup>7</sup> ratio low relative to Cold War era’s 9-11% amid continued global security concerns<sup>8</sup></li> </ul>
<p><b>B+</b> ↗</p> <p><b>5.2: Ample capital exists across sources for incremental and “breakthrough” R&amp;D.</b></p>	<ul style="list-style-type: none"> <li><b>+</b> <b>Public funding enabling innovation across priorities:</b> Pentagon alternative contracting mechanism (e.g., OTAs and CSOs) surpasses \$17B annually, up from &lt;\$5B five years ago, in bid to reach non-traditional disruptors;<sup>9</sup> 70% of U.S. R&amp;D funding flows to universities and labs, enabling private sector R&amp;D activity that drives leadership across critical tech areas (e.g., semiconductors, AI)<sup>10</sup></li> <li><b>+</b> <b>Private capital re-accelerates to new peak:</b> Defense tech<sup>1</sup> VC investment reached \$56B in 2025, up 83% YoY (when including OpenAI, VC investment increased 158% to \$96B), surpassing 2021’s \$43B peak; median deal size grew 38% YoY to \$30M, and median pre-money valuation grew 36% YoY to \$264M; private capital momentum shifting towards later-stage VC with 89% growth amid 58% YoY seed funding decline<sup>11,12</sup></li> <li><b>—</b> <b>Defense tech VC investment concentrated in AI, gaps emerging in other critical areas:</b> Advanced computing and software, including AI, leads defense tech segments in total investment value since 2015, more than double the next segment;<sup>13</sup> AI-related investments increased to 82% of total defense tech funding (72% in 2024); share of AI-related defense tech fundraising rounds &gt;\$1B rose to 56% in 2025, from 37% in 2024<sup>11</sup></li> </ul>
<p><b>B</b> ↗</p> <p><b>5.3: Sufficient capital and other resourcing (e.g., infrastructure) is available to scale companies with national security applications.</b></p>	<ul style="list-style-type: none"> <li><b>+</b> <b>Significant private capital mobilization underway, with some limitations to impact:</b> JPMorgan plans to invest \$1.5T over 10 years offering VC and direct equity investments up to \$10B to enhance growth and accelerate strategic manufacturing;<sup>14</sup> U.S. government funds 19% of R&amp;D, including R&amp;D deemed too risky for private capital;<sup>10</sup> federal reductions expected to weaken STEM workforce and reduce quantity of patented technology, threatening early-stage startups<sup>10</sup></li> <li><b>+</b> <b>Defense primes investing in innovators:</b> Corporate VC (CVC) coverage by primes grew 4% to \$1.3B in 2025, but slowed from 79% growth in 2024;<sup>11</sup> Oracle created Oracle Defense Ecosystem for defense startups;<sup>15</sup> Lockheed invested in Venus Aerospace &amp; X-Bow Systems for scaling rocket motor production and Saildrone for USV;<sup>16,17,18</sup> RTX provided strategic capital to Vatn for UUV development<sup>19</sup></li> <li><b>+</b> <b>Department takes steps to address non-financial barriers facing disruptors:</b> Pentagon mandates new software acquisition pathway (SWP) and flexible contracting tools;<sup>20</sup> Executive Order 14265 aims to scale Department procurement through alternative pathways;<sup>21</sup> DNI updates ICD-705, the standard for SCIFs, to address growing radio frequency and electromagnetic threats;<sup>22</sup> Big Beautiful Bill allocates \$100M for development of shared secure facilities, enabling increased collaboration across government and private sector<sup>23</sup></li> <li><b>—</b> <b>Defense awards for innovators, while growing, remain a fraction of defense spending:</b> Pentagon spending on defense tech startups increased 2.3x from 2023 to \$4B, but is only 0.4% of total defense budget, with more than 50% of that concentrated just in SpaceX<sup>24</sup></li> </ul>



## 6. Private Sector Innovator Base

OVERALL GRADE: **A-** TREND:

*Broad-based, self-innovating, forward-leaning ecosystem of traditional defense firms, startups, and commercial hyperscalers engaged in NSIB-relevant efforts*

TAILWINDS HEADWINDS

### Summary

Dual-use and non-traditional players are expanding their footprint, capturing a small but growing share of Pentagon obligations (<1%) while channeling capital into scaling production. Investor confidence in defense tech is at an all-time high as disruptors deepen partnerships with primes and peers. Innovators are deploying internal R&D capital ahead of confirmed Pentagon demand.

### At a glance...

**\$876B**

Combined market cap of top 3 defense disruptors as of January 2026

**16%**

Growth in Pentagon awards for top 15 defense tech companies

**42x**

Obligation value of top 5 primes vs. top 15 disruptors

### What Happened in 2025

- Contract awards for non-traditional players grew by 16%
- Defense primes continue to partner with disruptors for novel capabilities (e.g., Shield AI, Anduril, Hadrian + Primes)
- Market cap/valuation of top 3 tech disruptors larger than market cap of top 5 traditional primes
- Obligation value of top 5 primes is still 42x larger than the top 15 tech disruptors
- Sub-tier suppliers continue to face financial distress amid ongoing supply-chain chokepoints

### What we're looking for in 2026

- Continued momentum in defense tech investment
- Substantial increase in non-traditional contract awards

# Criteria Details

Criteria Grades	Datapoints since last report card
<p><b>A-</b> </p> <p><b>6.1: There exists sufficient breadth and depth in the NSIB to spur innovative outcomes.</b></p>	<ul style="list-style-type: none"> <li> <b>Funding for nontraditional players continues to grow:</b> Awards to top 15 defense tech disruptors (e.g., Palantir, Anduril, Saronic, Skydio) increased by 16% from \$3.7B in FY24 to \$4.3B; defense tech seed funding rounds grew 9% annually from 2002-2025, with a notable spike in funding 2021-2022 followed by a 42% p.a. decline from 2022-2025, driven by a shift in VC investment toward later-stage deals<sup>1,2</sup></li> <li> <b>Investor confidence in defense disruptors reaching all-time high:</b> SpaceX, Palantir, and Anduril have a combined market cap or valuation greater than the traditional primes combined (Lockheed, RTX, Boeing, General Dynamics, Northrop Grumman, L3Harris)<sup>1,2</sup></li> <li> <b>Non-traditional disruptors remain a small fraction of total obligated spending:</b> Top 15 disruptors still only account for 0.84% of total obligations in 2025; Anduril, SpaceX and Palantir alone account for 0.71% of total obligations; traditional 5 primes command 35% of obligated spend in FY25<sup>1</sup></li> <li> <b>Venture-backed, non-traditional players are narrowly focused:</b> 71% of NatSec Top 100 private defense companies are concentrated in AI &amp; autonomy, advanced computing &amp; software, space tech, and integrated sensing &amp; cyber; other Department priorities (hypersonics, quantum, directed energy, biotech) only account for 7%<sup>3</sup></li> <li> <b>Vendor base remains highly concentrated, yet total number of prime contractors growing:</b> Top 100 contractors accounted for 67.5% of obligated dollars in FY25, a 2.3% increase from FY24;<sup>1</sup> total number of Pentagon prime contractors increased by 1% in FY25 from 9,599 to 9,726<sup>1</sup></li> <li> <b>Sub-tier suppliers continue to face financial stress and instability:</b> 50% of publicly held suppliers showed declining revenue or moderate-high financial risk, decreasing from 64% in FY24;<sup>4</sup> many critical systems (e.g., munitions, aircraft engines) continue to source from a single supplier, threatening to shut down operations when suppliers face distress;<sup>5</sup> Pentagon priorities continue to be delayed by supply chain issues (e.g., T1 satellites)<sup>6</sup></li> </ul>
<p><b>A-</b> </p> <p><b>6.2: The NSIB is self-catalyzing innovation ecosystems ahead of direct demand.</b></p>	<ul style="list-style-type: none"> <li> <b>Disruptors investing their own R&amp;D capital in new capabilities ahead of firm demand:</b> Public disruptors (e.g., Palantir, AeroVironment) are investing capital into R&amp;D at levels higher than primes;<sup>7</sup> private companies are also investing heavily, including:             <ul style="list-style-type: none"> <li>• Shield AI builds X-BAT, the first VTOL with both landing capability and supersonic speed, designed for Air Force's CCA program<sup>8</sup></li> <li>• SpaceX successfully launched and landed its Starship launch vehicle, the largest spacecraft ever launched<sup>9</sup></li> <li>• Saronic building large-scale USV designed to support dual commercial and defense missions<sup>10</sup></li> <li>• Cerebras Systems developed advanced AI prompting a \$45M DARPA contract for battlefield simulation applications<sup>11</sup></li> </ul> </li> <li> <b>Innovators are partnering with traditional and non-traditional partners:</b> Shield AI partnering with RTX on integrating AI with munitions and aerial swarm targets;<sup>12</sup> Shield AI partnering with L3Harris for demonstration combining Shield's UxS system with L3Harris' EW software;<sup>13</sup> Anduril partnering with General Dynamics on armored vehicle detection<sup>14</sup> and with Meta on XR;<sup>15</sup> Palantir partnering with BDS to accelerate AI adoption across BDS programs<sup>16</sup> and with Lear to leverage Palantir Foundry/software,<sup>17</sup> Hadrian partnering with Lockheed Martin to scale missile component production<sup>18</sup></li> <li> <b>Defense primes are growing R&amp;D slower than U.S. industry average:</b> Five-year compound annual growth rate (CAGR) for total R&amp;D across top defense primes (i.e., Boeing, General Dynamics, Lockheed, Northrop, and RTX) was 3.0% from 2019-2024;<sup>7</sup> five-year CAGR for scientific R&amp;D across U.S. industries was 4.9% between 2020-2025<sup>19</sup></li> </ul>



## 7. Public/Civil Innovation Base

OVERALL GRADE: **C-** TREND:

*Defense/national labs, other FFRDCs/UARCs, and academic institutions developing (and protecting) national security-oriented research*

TAILWINDS HEADWINDS

### Summary

The U.S. remains the global leader in public R&D, but inflation-adjusted spending has stagnated since 2010, with China narrowing the gap. The Pentagon has sharpened research alignment through challenge-based awards, but cuts to basic research threaten long-term capability. Escalating state-backed cyber intrusions further heighten the need for stronger IP protection.

### At a glance...

0%

**Growth in publicly-funded R&D expenditures since 2010 (inflation adjusted PPP)**

1%

**Reduction in public/civil R&D funding 2024-25 – adjusted for inflation**

### What Happened in 2025

- Bipartisan IP protection policy momentum continues with the introduction of the RESTORE Patent Rights Act
- Pentagon implemented 20+ DIB-recommended changes to align research on emerging capabilities
- Inflation-adjusted federal R&D funding expected to decline by ~1%
- U.S. lead in federal R&D is quickly eroding with China closing the funding gap to just 15%
- IP threats from China persist while new, more sophisticated attacks are coming from Russia

### What we're looking for in 2026

- Protective measures and enforcement of security laws to counteract IP theft and mitigate risky academic partnerships
- Funding increases for agencies that support U.S. basic research & STEM (e.g., NASA, DOE, NSF)

# Criteria Details

Criteria Grades	Datapoints since last report card
<p><b>C+</b> </p> <p><b>7.1: There is sufficient funding for public sources of innovation (e.g., government labs, FFRDCs) and research alignment to national security priorities.</b></p>	<ul style="list-style-type: none"> <li> <b>Department taking action to support and fund research on emerging capabilities:</b> 2024 Defense Innovation Board report that called for research alignment saw signs of early adoption (1/3 of 65 total recommendations implemented by early 2025)<sup>1</sup></li> <li> <b>U.S. universities and federally-funded R&amp;D centers (FFRDCs) see continued R&amp;D expenditure growth:</b> University R&amp;D spend increased to \$118B in 2024, an 8.1% increase over 2023;<sup>2</sup> U.S.' 42 FFRDCs spent \$31.7B in 2024, \$2.4B (+8.2%) more than 2023<sup>3</sup></li> <li> <b>U.S. total federal R&amp;D funding growth stagnating:</b> FY25's federal R&amp;D estimate of \$197B is a +1.5% YoY nominal increase from FY2024 but a 1% shrinkage accounting for inflation;<sup>4</sup> 2019-2025 nominal CAGR of +4.65% p.a. is down from +5.06% p.a. in 2018-2024<sup>4</sup></li> <li> <b>U.S. lead in federal R&amp;D expenditures is quickly eroding:</b> U.S. maintains lead in federal R&amp;D expenditures in constant PPP dollars, but China has closed the gap from 66% to 15% since 2010 while growing by 7% p.a. since 2010; in 2023, China grew R&amp;D expenditure 8.7% YoY, more than 5x U.S. growth<sup>5</sup></li> </ul>
<p><b>D+</b> </p> <p><b>7.2: Defense/civil labs catalyze scalable NSIB advances, and the research is adequately protected.</b></p>	<ul style="list-style-type: none"> <li> <b>Pentagon increases technology transfer (T2) activity and academic grants:</b> Army T2 saw 81 new patent applications in FY24 and grew to 287 university partnerships (EPAs), up from 260 in FY23;<sup>6,7</sup> Air Force T2 executed 92 new EPAs in FY24, increasing total to 416<sup>8</sup></li> <li> <b>Bipartisan IP protection policy momentum continues, but no results yet:</b> Following 2024 Protecting American Innovation and Development (PAID) Act, bipartisan efforts introduced the Realizing Engineering, Science, and Technology Opportunities by Restoring Exclusive (RESTORE) Patent Rights Act of 2025 to protect U.S. IP from foreign court interference; bills not yet passed<sup>9,10</sup></li> <li> <b>Department technology license utilization transparency lags behind other departments:</b> Central reporting of federally-developed technology license usage in the Pentagon ceased in FY22;<sup>11</sup> other departments (e.g., NIH, DOT, and DOI) continue to report annually<sup>12,13,14</sup></li> <li> <b>IP threats from China persist:</b> DIA report identifies China as most active threat to U.S. critical infrastructure networks<sup>15</sup> <ul style="list-style-type: none"> <li>• Licit and illicit IP acquisition campaigns identified in 2024;<sup>16</sup> Congress estimates total theft of IP by China up to \$600B<sup>17</sup></li> <li>• House Select Committee on the CCP found U.S. public R&amp;D dollars furthering Chinese military research through ~150 risky academic partnerships with China's military and defense industrial base<sup>18</sup></li> </ul> </li> <li> <b>IP threats from Russia grow in sophistication:</b> FBI issued warning on new forms of Russian cyberattacks, state and non-state, across critical infrastructure and public sectors (e.g., Cyber Army of Russia Reborn conducted several low-level attacks against U.S. water and energy infrastructure), confirming November 2024 National Counterintelligence and Security Center warnings<sup>16,19</sup></li> </ul>



## 8. Manufacturing Capacity and Industrial Base

OVERALL GRADE: **D+** TREND:

*Resilient, innovative production base and infrastructure that enables innovators to deliver on NSIB modernization and other strategic priorities*

TAILWINDS HEADWINDS

### Summary

The U.S. is moving to increase defense manufacturing throughput, from critical mineral sourcing and refinement to advanced manufacturing and footprint expansion. Public and private capital are scaling production across the stack, but structural fragilities remain—particularly in sub-tier supply chains.

### At a glance...

**\$100B**

**In loans available for critical mineral production partnerships**

**12**

**Of 50 USGS critical minerals are at 100% import reliance, unchanged from 2023**

**3**

**Estimated days until U.S. maritime missile depleted in a theoretical conflict with China**

### What Happened in 2025

- U.S. A&D real production output recovering towards highest levels since pre-COVID
- Pentagon deploying capital to build and repurpose mfg. infrastructure (e.g., SkyFoundry, Ohio ammo plant)
- Primes and disruptors investing their own capital to scale production (e.g., Anduril's \$1B investment in Ohio)
- U.S. share of global manufacturing growing, but China is still 60% larger on a relative basis
- Pockets of manufacturing innovation (e.g., additive mfg.), but widespread optimization still lagging

### What we're looking for in 2026

- Substantial outputs as a result of investments made
- Expanding investment in minerals beyond extraction
- Progress in shipbuilding

# Criteria Details

Criteria Grades	Datapoints since last report card
<p><b>D+</b> </p> <p><b>8.1: The industrial base has sufficient capacity to respond to NSIB needs.</b></p>	<ul style="list-style-type: none"> <li> <b>U.S. actively diversifying and nearshoring supply chain:</b> Defense Production Act awards grew from \$588M to \$856M in FY25;<sup>1,2,3</sup> Big Beautiful Bill makes available up to \$100B in loans for critical minerals production for public-private partnerships;<sup>4</sup> U.S. leveraging allies for critical minerals and rare earths deals (e.g., Australia, Japan, Kazakhstan, Malaysia, Thailand, Saudi Arabia)<sup>5,6,7</sup></li> <li> <b>Defense production hits all-time high in 2025:</b> Gross value of U.S. defense and space equipment real production output grew 5% YoY to highest level since pre-COVID<sup>8,9</sup></li> <li> <b>Public and private investments bolstering manufacturing capacity at scale:</b> <ul style="list-style-type: none"> <li>• Army: Announced SkyFoundry with the goal of producing 1M+ drones at full-rate, 10,000 drones per month by 2026;<sup>10</sup> investing \$635M to build Iowa Army Ammunition Plant<sup>11</sup></li> <li>• Pentagon: Taking a 15% stake and providing a \$150M loan to MP Materials for magnet “10X Facility” while guaranteeing stable demand<sup>12</sup></li> <li>• DIB: Northrop Grumman invested \$500M in B-21 production ramp ahead of formal demand from USAF and potential order expansion;<sup>13,14</sup> Anduril spending \$1B of its own capital on Ohio autonomous weapons factory<sup>15</sup></li> </ul> </li> <li> <b>Sub-tier supply chain risks persist:</b> U.S. remains 100% import reliant on 12 of 50 USGS critical minerals (unchanged from 2023) and &gt;50% net-import-reliant for 28 of 50 (down from 29 in 2023);<sup>16,17</sup> China expanded 2023 REM processing tech ban (e.g., 31% drop in China REM exports in September);<sup>18,19</sup> recent U.S.-China trade deal eases some restrictions, long-term results remain to be seen<sup>20</sup></li> <li> <b>U.S. manufacturing capacity is outpaced by China despite growth:</b> In 2024, China held 27.7% of global manufacturing output, steady with 28% in 2018;<sup>21</sup> U.S. 2024 share was 17.3%, up from 15.9% in 2023 but steady with 18% in 2018 (China is 60% larger on relative basis);<sup>21</sup> China captured 53% of world’s shipbuilding in 2024 compared to U.S.’ 0.1%;<sup>22</sup> SHIPS Act to grow shipbuilding base yet to be passed<sup>23</sup></li> <li> <b>U.S. supply chain remains unequipped for a potential conflict with China:</b> War games reveal that in the event of such a conflict, the U.S. would expend its maritime strike missiles in three days and its land attack weapons within two weeks<sup>24</sup></li> </ul>
<p><b>D+</b> </p> <p><b>8.2: Industrial base is modernizing manufacturing techniques to respond to NSIB needs, shocks and global competition.</b></p>	<ul style="list-style-type: none"> <li> <b>DIB embracing novel manufacturing techniques in bid to augment capacity through efficiency:</b> <ul style="list-style-type: none"> <li>• MANTECH program launched to improve manufacturing modernization through public-private partnerships in new manufacturing technology<sup>25</sup></li> <li>• Pentagon requested \$3.3B for projects involving AM in FY26 (+83% YoY);<sup>26</sup> Naval Undersea Warfare Center Division implemented AM, cutting costs on tow cables by 75-80%;<sup>27</sup> Navy’s Southeast Regional Maintenance Center built rotors for ~3000x cheaper (\$131 vs. \$316,000)<sup>28</sup></li> <li>• Hadrian launched additive manufacturing division to strengthen domestic production for priority defense programs amid surge in partnerships<sup>29</sup></li> <li>• HII announced deal with C3 AI to implement agentic AI to optimize workflow automation;<sup>30</sup> HII ordered 12 large-format additive manufacturing systems, becoming first U.S. shipyard with AM capabilities<sup>31</sup></li> </ul> </li> <li> <b>The U.S. outsources critical manufacturing to China, with limited transparency:</b> Department has limited visibility in subsystems origins and no visibility in parts and equipment; 2025 GAO report reveals Department found China-manufactured magnets on F-35<sup>32</sup></li> </ul>



## 9. International Alliances and Partnerships

OVERALL GRADE: **C-** TREND:

*Level of linkage between U.S. and international partners (e.g., IP rights, data sharing)*

TAILWINDS HEADWINDS

### Summary

While the U.S. is pursuing global defense innovation and collaboration on NSIB priorities through new partnerships, tangible progress on implementation has been limited (e.g., AUKUS) amid concerns surrounding the efficacy of joint-efforts (e.g., NATO Innovation Fund). Pledges from NATO allies to increase defense spending and meet capability targets bring potential for deeper partnership across defense tech priorities.

### At a glance...

**39%**

Decrease in U.S. FMS vs. 2024

**\$150B**

Direct investment in U.S. & ROK shipbuilding partnership

**5%**

NATO allies commit to annual GDP allocation to meet capability targets

### What Happened in 2025

- U.S. expanded international partnerships to include manufacturing (e.g., ROK)
- U.S. passing additional legislation to help guard IP while streamlining ally tech transfer processes
- FMS, DCS, and ITAR processes still lack efficiency to expedite cooperation with foreign partners
- Despite U.S. recommitment to AUKUS, milestones continue to be delayed

### What we're looking for in 2026

- Reacceleration and delivery of key milestones in international partnerships (e.g., AUKUS, U.S.-ROK shipbuilding)
- Expedited FMS/DCS process
- NATO partners meeting spending commitments and capability targets

# Criteria Details

Criteria Grades	Datapoints since last report card
<p><b>C-</b> </p> <p><b>9.1: There are strong linkages between the U.S. and allies/partners in priority technology areas.</b></p>	<ul style="list-style-type: none"> <li> <b>U.S. pursuing international partnerships to accelerate cutting-edge technologies &amp; build production capacity:</b> DIU and Tawazun Council (UAE) accelerating adoption of COTS tech for defense through nontraditional processes (e.g., bilateral challenges, new pathways for startups to access labs);<sup>1</sup> U.S. and India signed 10-year deal to fortify industrial cooperation, increase tech transfers;<sup>2,3</sup> U.S. &amp; ROK announced shipbuilding partnerships including \$150B in direct investment and multiple partnerships among companies (e.g., HII &amp; HD Hyundai; GD NASSCO &amp; Samsung)<sup>4,5,6</sup></li> <li> <b>NSS prioritizes defense output amid expanded expectations from allies:</b> Allies expected to increase their share of security burden with emphasis on output &amp; readiness; NATO countries to spend 5% of GDP on defense and assume primary responsibility for respective regions; NSS elevates critical allies (e.g., Japan, ROK) and expands economic partnership with India<sup>7</sup></li> <li> <b>U.S. seeks to advance defense innovation with Indo-Pacific allies, but progress still only provisions in NDAA:</b> 64<sup>th</sup> annual National Defense Authorization Act (NDAA) includes provisions on prioritized tech areas for Indo-Pacific (e.g., \$300M for Taiwanese ship building and drone technology, partnership with Japan and AUKUS on UAS and missile production/development);<sup>8</sup> tangible impact remains to be seen</li> <li> <b>2025 U.S. Foreign Military Sales (FMS) decreased year-over-year:</b> FMS totaled \$88B, down 39% from 2024 levels, with 3-year and 5-year CAGRs of -10% and -18%, respectively<sup>9,10</sup></li> <li> <b>Limited battlefield testing of NSIB innovations is slowing learning cycles:</b> Collaboration between U.S. companies and Ukrainian forces remains ad hoc and limited to a handful of startups; no formal framework for sharing contested, real-world operational data is slowing U.S. UAS innovation cycles<sup>11</sup></li> <li> <b>Allies investing in critical tech areas, however significant turnover in leadership and strategy lacks clarity:</b> NATO Innovation Fund increased spending<sup>12</sup> and investment in critical tech (e.g., global biosecurity, AI innovation, space technology);<sup>13, 14, 15, 16</sup> however, the fund has lost 80% of original partners since 2024<sup>17</sup> amid growing concerns surrounding mission articulation and execution<sup>18</sup></li> <li> <b>Concerns growing around AUKUS ability to deliver:</b> U.S. missing Pillar I production targets, with significant backlog of boats funded but not built;<sup>19</sup> Pillar II has not delivered tangible results in producing priority technologies at speed or scale, only early experiments<sup>20, 21</sup></li> </ul>
<p><b>C-</b> </p> <p><b>9.2: U.S. balances protection of national security and IP while fostering innovation.</b></p>	<ul style="list-style-type: none"> <li> <b>U.S. enhancing national security via export restrictions:</b> BIS finalized “Affiliates Rule,” automatically extending export restrictions to any foreign entity that is 50% or more owned by a company on the Entity List or Military End-User (MEU) List<sup>22</sup></li> <li> <b>U.S. pauses new Affiliates Rule:</b> U.S. delayed implementation of affiliates rule for 12 months with new U.S.-China trade agreement<sup>23</sup></li> <li> <b>BIS currently does not have a long-term workforce plan to determine resource needs:</b> Despite BIS funding growing by \$97M, almost doubling from 2013 to 2024, GAO found no long-term workforce plan to support long-range planning and resourcing—staffing needs are determined on an annual basis as a part of the budget request<sup>24</sup></li> <li> <b>Foreign Arms Sales Task Force’s measures to improve FMS processes stall in Senate but added to NDAA:</b> Task Force helped pass several measures in the House to codify reforms to the FMS process with the goal of improving transparency, efficiency, and ease cooperation with foreign partners,<sup>25</sup> however, these measures are awaiting further action from the Senate Committee on Foreign Relations, and have yet to be passed;<sup>26</sup> NDAA includes several pieces of legislation (e.g., ARMOR, Made-in-America Defense Act) that reduce bureaucratic FMS burden on select defense products, but stop short of fully revamping FMS and DCS process<sup>27</sup></li> </ul>



## 10. Talent Base

OVERALL GRADE: **D+** TREND:

*Pipeline of domestic and foreign-born talent trained and working in NSIB-relevant fields across the public and private sector*

TAILWINDS HEADWINDS

### Summary

Significant work remains to rebuild the A&D talent base: 1.9M manufacturing jobs will go unfilled through 2033, 29% of the A&D and NSIB workforce is nearing retirement, and turnover runs 4x the national average. AI-enabled productivity tools and advanced manufacturing will help, but persistent talent attraction issues and new restrictions on international STEM recruitment pose an existential risk to production ramps and long-term innovation.

### At a glance...

**2x**

**More STEM PhDs graduate annually in China compared to U.S.**

**60%**

**Of manufacturers view inability to attract and retain talent as their top challenge**

**17%**

**Average A&D industry turnover versus national industry average of 3.9%**

### What Happened in 2025

- USG scaling AI talent base (e.g., GigEagle, Tech Force) through partnerships with private players
- 3.8M manufacturing jobs to be created (2024-2033) with >50% expected to remain vacant
- 13% drop in top researchers at U.S. universities (2020-2024), while China nearly doubled research workforce
- Retirement bubble concerns continue with 29% of workforce nearing retirement age amid high turnover
- H-1B new employment approvals decreased by 19%, with professional & technical services dropping 35%

### What we're looking for in 2026

- Reform and updating of national talent strategy (e.g., new criteria for Schedule A, expansion of EB-1 visa), including implementation of STEM talent strategy
- Reversal of PhD “brain-drain”
- Improvement in A&D/NSIB workforce turnover rate

# Criteria Details

Criteria Grades	Datapoints since last report card
<p><b>C</b> ↗</p> <p><b>10.1: U.S. attracts, retains, and develops domestic public and private NSIB talent (e.g., availability, quality, diversity), particularly in STEM and skilled trades.</b></p>	<ul style="list-style-type: none"> <li><span style="color: green;">+</span> <b>A&amp;D public and private workforce* growth above industry average, but slowing:</b> A&amp;D workforce grew 3% from 2023-2024, outpacing national average growth of 2%; growth slower than post-Covid period (+5% in 2022-2023, +4% in 2021-2022)<sup>1</sup></li> <li><span style="color: green;">+</span> <b>Uptick seen in number of apprenticeships in advanced manufacturing:</b> 96,500 registered apprentices served in the advanced manufacturing industry in 2024, up from 92.5K in 2023 (3.5% YoY increase), and an overall 27% increase over the past 5 years<sup>2</sup></li> <li><span style="color: green;">+</span> <b>Department continues investment in AI talent management:</b> DIU's AI app 'GigEagle' awarded \$5.3M to build agile talent network; user base grew from 4.5K to 10K (100% YoY);<sup>3,4</sup> Pentagon to provide no-cost training for GenAI.mil to all employees;<sup>5</sup> CDAO rebuilding AI talent pipeline<sup>6</sup></li> <li><span style="color: green;">+</span> <b>Department building alternative programs to attract top talent from industry:</b> Army announced creation of Executive Innovation Corps;<sup>7</sup> WH OPM established 'Tech Force' with big tech to recruit 1,000+ early-career tech professionals and experienced managers to augment AI talent<sup>8</sup></li> <li><span style="color: grey;">-</span> <b>A&amp;D/NSIB-relevant jobs postings fill-rate improvement slows:</b> Median job posting duration across A&amp;D/NSIB-relevant industries* was 26 days from August 2024 to August 2025, unchanged from 2024 following a 10% improvement to 2023 (median of 29 days); A&amp;D/NSIB industry median job posting duration remains marginally higher than tech industries** (26 days vs. tech's 24 days)<sup>9</sup></li> <li><span style="color: grey;">-</span> <b>Retirement bubble concerns persist:</b> 29% of A&amp;D workforce is at or nearing the age of retirement (55+) compared to 18% in tech** and the national average of 24% (2024);<sup>9</sup> 2.8M of the 3.8M new manufacturing jobs (&gt;73%) through 2033 will be from retirees<sup>10</sup></li> <li><span style="color: grey;">-</span> <b>Trade skills labor market loosens but future shortages remain a concern:</b> Manufacturing labor market is the loosest it has been since May 2021;<sup>11</sup> 60% of U.S. manufacturers view talent attraction and retention as their top challenge;<sup>11</sup> 3.8M manufacturing jobs will be created from 2024 through 2033, of which 50% are projected to remain vacant unless current skills gap is closed<sup>10</sup></li> <li><span style="color: grey;">-</span> <b>Industry turnover is more than four times the national average:</b> A&amp;D experiences a 17% turnover rate in 2024, excluding retirements, which is considerably higher than the national average of 3.9%<sup>9,12</sup></li> </ul>
<p><b>D-</b> ↓</p> <p><b>10.2: U.S. leads in attracting and retaining a robust pipeline of foreign talent with in-demand skills needed for national security missions.</b></p>	<ul style="list-style-type: none"> <li><span style="color: grey;">-</span> <b>H1B approvals across all NAICS codes decreased by 19%:</b> 113k approvals in 2025 vs. 139k in 2024; total new employment H-1B applications declined by 18%; however, total continuation applications increased by 20%, with continuation denials increasing by 35%<sup>13</sup> <ul style="list-style-type: none"> <li>• Professional, scientific, &amp; technical services approvals shrank 36%; share of total approvals shrank 11% (38% in 2025 vs. 49% in 2024)<sup>13</sup></li> <li>• Manufacturing approvals shrank 12%; share of total approvals increased by 1% (10% in 2025 vs. 9% in 2024)<sup>13</sup></li> </ul> </li> <li><span style="color: grey;">-</span> <b>Top scientists leave the U.S., while China scales as talent center:</b> Top researchers at U.S. universities fell from 36,599 to 31,781 (2020-2024), whereas China's nearly doubled to 32,511 in the same period;<sup>14</sup> international students account for ~50% of all STEM master's and PhD graduates, and ~60% of U.S.-trained international AI PhDs cited visa issues as primary reason for leaving;<sup>15</sup> new international student enrollment at U.S. universities declined by 17%<sup>16</sup></li> <li><span style="color: grey;">-</span> <b>U.S. international talent attraction falling as China, India, EU launch talent poaching initiatives:</b> 33% reduction in foreign STEM graduated from U.S. universities is expected to reduce annual productivity by 3%, resulting in a loss of \$200B+ annually after 10 years;<sup>17</sup> global powers (e.g., China, India, EU) launching initiatives to poach talent from U.S., specifically targeting scientists and researchers<sup>18</sup></li> </ul>

\* Industries classified as A&D / NSIB-relevant: Aerospace products and parts manufacturing; ship and boat building; engine, turbine, and power transmission equipment manufacturing; computer and peripheral equipment manufacturing; navigational, measuring, electromedical, and control instruments manufacturing; electronic component and product manufacturing  
 \*\* Telecom, media, and technology (TMT) industries classified as Tech: software publishers; data processing, hosting, and related services, computer systems design and related services

## Recommendations for Improvement

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### 1. **Expand Advance Market Commitments to Strengthen Demand Signals**

Congress should provide clear legislative authority and appropriations flexibility to expand the Pentagon's use of advance market commitments (AMCs) for priority national security technologies, enabling multi-year demand signals tied to validated operational requirements. Predictable AMCs would unlock private capital for capital expenditures, manufacturing scale-up, and workforce investment while reducing the financing risk that currently constrains non-traditional defense suppliers.

### 2. **Create a Digital Foreign Military Sales (FMS) and Direct Commercial Sales (DCS) Fast-Track Pipeline**

The Pentagon, Department of Commerce, and Department of State should pilot a digitally integrated and AI-enabled FMS and DCS fast-track pathway for allied and partner nations purchasing U.S. systems, with standardized requirements, real-time status tracking, and multi-year, multi-country standing licenses to eliminate repetitive licensing, enable iterative delivery, and accelerate timelines across both channels. While continued reform of the FMS process remains important, more than two-thirds of U.S. arms exports now flow through Direct Commercial Sales, making modernization and streamlining of the DCS process essential to sustaining U.S. defense competitiveness and meeting allied demand at speed. This approach would materially reduce transaction costs while increasing accountability, predictability, and trust for partners navigating both FMS and DCS.

### 3. **Refocus Labs, FFRDCs, and UARCs on Uniquely Governmental Gaps**

Congress should direct the Science, Technology, and Innovation Board to conduct a greenfield review of the Pentagon's service laboratories, FFRDCs, and UARCs to assess mission alignment, duplication, and relevance to current and future operational needs. The Board should provide concrete recommendations to the Pentagon and Congress identifying which efforts are uniquely governmental and underserved by commercial markets and private investment, and which activities should be consolidated, restructured, or transitioned to commercial or hybrid models. The review should explicitly evaluate how the research enterprise can better accelerate the transition of commercially developed technologies to the warfighter by aligning incentives, authorities, and funding toward rapid experimentation, scaling, and fielding.

## Recommendations for Improvement

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### **4. Accelerate a Nationwide Network of Shared Commercial Classified Facilities**

The Pentagon must urgently accelerate the establishment of a nationwide network of shared commercial classified facilities and networks, as authorized in the FY25 NDAA, to support execution of the Golden Dome initiative and other sensitive missions. It is estimated that over half of current SCIFs in the United States do not meet TEMPEST standards, creating significant vulnerabilities and impeding the availability of SCIF space. Absent rapid action, the existing ICD-705 compliance cliff and SCIF capacity shortfalls will become a binding constraint on program execution by slowing deployment timelines and exacerbating an already critical infrastructure gap.

### **5. Modernize Shared Budget and Portfolio Performance Data between Congress and the Pentagon**

The Pentagon and Congress should jointly prioritize the modernization of acquisition and budget data systems by adopting interoperable commercial software platforms that provide visibility into program execution and portfolio performance. Congress should pair new acquisition authorities with clear expectations for data transparency and shared reporting, while the Department should demonstrate full use of these tools to enable timely oversight, reprogramming requests and approvals, early identification of risk, and evidence-based decision-making.

### **6. Create a National Defense Manufacturing Apprenticeship Pipeline**

Congress should establish a nation-wide National Defense Manufacturing Apprenticeship Pipeline that funds paid, employer-backed apprenticeships with defense manufacturers, prioritizing high-need trades and providing federal cost-sharing for wages during early training periods. The program should focus on critical defense sectors and regions with workforce shortages—like the Accelerated Training in Defense Manufacturing program for Navy shipbuilding—to drive participation at scale.

### **7. Prioritize and Resource Edge AI for Contested Environments**

The Pentagon's accelerated adoption of artificial intelligence is a critical step toward maintaining technological superiority, but current investments remain overly concentrated on permissive, connected environments. Additional resourcing and prioritization are needed to operationalize AI at the edge, ensuring systems can function in degraded, disconnected, and contested conditions central to future conflict.

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