



SPACE SUPPLY CHAIN FORUM

Evidence Baseline Pre-Read

Priority issues for validation and discussion

PREPARED FOR

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PURPOSE

Establish a shared evidence baseline before structured listening and forum deliberation

STATUS

Pre-decisional | Aggregated | Non-attributed | For discussion purposes only



This document is not a final “What We Heard” report. It summarizes public evidence to establish a common starting point. Forum findings will be developed only after participant input is captured, reviewed, and synthesized.

How to Read This Evidence Baseline

Method, source treatment, and the role of the AIA/PwC evidence

Working definition: Signal

Signal. An observed issue, pattern, trend, barrier, opportunity, or data gap that may indicate a meaningful condition in the commercial space ecosystem. A signal may describe a current condition or an emerging change. It is not automatically a conclusion, recommendation, or request for federal action.

For this forum, a signal becomes more useful when it identifies the affected supply-chain tier or function, the scale and timing of the condition, the decision or outcome at risk, and the level of evidence supporting the observation.

Purpose of the preface. This pre-read establishes a shared starting point before structured listening and deliberation. It does not report forum findings, attribute positions to participants, or state an OSC policy conclusion. It makes the starting evidence visible and identifies what the forum must confirm, refine, challenge, or leave unresolved.

Methodology at a glance

Step	How the baseline was built
1. Scan public evidence	Review primary federal sources, industry studies, and independent analysis published through August 5, 2026.
2. Screen topics	Apply five criteria: system impact, decision value, evidence strength, forum utility, and proximity to existing action.
3. Triangulate sources	Separate documented facts, analysis, and recommendations. Look for convergence and material disagreement across source types.
4. Convert gaps into questions	State what the public evidence does not settle and use those gaps to shape forum validation prompts and capture fields.
5. Validate and synthesize	Collect specific operational evidence; normalize and deduplicate inputs; classify each theme as confirmed, refined, challenged, or unresolved before drafting any post-forum “What We Heard” product.

Source Inclusion Criteria

Sources were selected based on credibility, public availability, relevance to commercial space supply chains, publication or update between January 1, 2024, and August 5, 2026, and their value in informing forum discussion.

How the AIA/PwC report is used

Strengthening America’s Space Supply Chain: Built for Yesterday, Igniting Momentum for Tomorrow is a principal industry evidence source within this baseline. It contributes operational evidence on demand stability, lower-tier concentration, qualification and testing, manufacturing capacity, workforce, and capital.

Important distinction: the AIA/PwC publication is not a government report, and its recommendations are not adopted as OSC conclusions by inclusion. OSC reads it alongside primary federal sources from GAO, USGS, DOD, NASA, the White House, and the U.S. Space Force, as well as independent analysis. The baseline relies on the convergence—and the tension—across sources, not on any single report as dispositive.



What participants are being asked to add

- Confirm, refine, challenge, or identify what remains unresolved in each theme.
- Add operational specificity: the affected tier, component, process, lead time, cost, capacity effect, or decision at risk.
- Distinguish documented facts and direct experience from informed judgment or an open question.

What comes next. Forum inputs will remain aggregated, non-attributed, and non-binding. OSC will draft a post-forum “What We Heard” presentation and report only after the captured dataset is reviewed, normalized, deduplicated, and checked for traceability and defensibility.

01 Executive Summary

What the evidence says before the forum begins

The U.S. space sector is scaling faster than the industrial system that supplies it. Recent industry and government evidence converges on a common pattern: demand is rising, but visibility, qualified capacity, critical inputs, testing infrastructure, skilled labor, and supplier financing are not expanding at the same rate. The immediate risk is not a lack of innovation. It is the inability to build, qualify, and deliver reliably at scale.^[1, 2, 7]

Bottom line

The highest-value forum discussion is not “Is the supply chain strained?” The evidence already supports that conclusion. The useful question is where the binding constraints sit, which constraints are shared across civil, commercial, and national security demand, and what evidence would justify coordinated action.

Six priority evidence themes

#	Theme	Why it matters
1	Demand visibility and acquisition stability	Investment decisions depend on credible volume, timing, and funding signals.
2	Supplier visibility and critical dependencies	The greatest supply chain risks often exist beyond the most visible suppliers.
3	Critical minerals and specialized materials	Foreign concentration and export controls create systemic exposure.
4	Qualification, testing, standards, and compliance	Capacity can exist physically but remain unavailable until it is qualified.
5	Manufacturing, infrastructure, and workforce capacity	Facilities, power, logistics, tooling, and labor operate as one production system.
6	Capital access and small-supplier scaling	Capital is most constrained where the supply chain is often most fragile.



How this pre-read should be used

- Read the evidence as a starting hypothesis, not a conclusion attributed to forum participants.
- Use the forum to confirm, challenge, narrow, or expand each theme with direct operational evidence.
- Distinguish recurring patterns from isolated examples, and separate immediate constraints from longer-term structural risks.
- Capture enough detail to support a defensible post-forum “What We Heard” presentation and report.

02 Scope, Method, and Evidence Standards

A transparent baseline designed for structured listening

Scope

This pre-read focuses on upstream and midstream conditions affecting the ability to produce, qualify, finance, and deliver space systems and components. It draws from public federal sources, industry studies, and independent analysis published through August 5, 2026. It does not attempt to estimate the full economic cost of supply-chain disruption or rank specific firms, programs, or suppliers.

Topic selection criteria

Criterion	Screening question
System impact	Could the issue affect multiple programs, missions, or customer segments?
Decision value	Would better evidence change planning, investment, acquisition, or coordination choices?
Evidence strength	Is the issue supported by multiple credible source types?
Forum utility	Can participants add operational detail that is not visible in public reports?
Action proximity	Is the issue connected to existing federal, industry, or capital-market activity?

Evidence standards

- Primary federal sources establish policy direction, program activity, official data, and documented government findings.
- Industry studies provide operational and market evidence from primes, suppliers, and executives, but may also advance recommendations that should be treated as source positions rather than OSC conclusions.
- Independent analysis is used to illuminate current market behavior or geopolitical exposure when government data is incomplete or delayed.
- All claims in this pre-read are traceable to numbered sources. OSC internal signal IDs are provided only for workflow traceability and are not used as the sole basis for public claims.

Boundary statement

This document does not prescribe policy, endorse a program, or imply a federal commitment. It is designed to improve the quality of listening by giving participants a shared, evidence-based point of departure.



Internal workflow source: CSPIS Ecosystem Signal Intelligence Workbook v2.0 Pilot, reviewed August 5, 2026. Used only for signal-ID traceability and gap identification; not used as the sole basis for external factual claims.



03 Demand Visibility and Acquisition Stability

Priority: Very high impact | Very high decision value

Evidence baseline

- AIA and PwC identify inconsistent demand signals, shifting budgets, continuing resolutions, and program delays as central reasons suppliers hesitate to expand capacity. The 2026 space supply-chain study describes a market growing faster than its industrial base while capital investment remains cautious.^[1]
- The July 2026 AIA/PwC ramp-readiness survey found that confidence falls sharply as production requirements move beyond incremental growth. Eighty-five percent of surveyed executives reported an ability to support 1.25x production within 18 months, but confidence fell by nearly half beyond 2x. At 3-4x, 33-42 percent reported that they could not or would not deliver on any timeline.^[2]
- The same survey found demand distortion across tiers: 36 percent of companies at the top of the value chain reported under-forecasting, while 72 percent at the bottom reported over-forecasting. This is a classic bullwhip condition: downstream suppliers see volume signals that are less stable and less credible than the plans that generated them.^[2]
- DOD's industrial strategy treats resilient supply chains, flexible acquisition, workforce readiness, and economic deterrence as connected priorities rather than separate problems. Its implementation plan calls for deeper analysis of supply-chain vulnerabilities and onshoring of defense-critical production.^[7, 8]

What the current evidence does not settle

- Which space demand is truly additive rather than a reallocation of constrained capacity across customers?
- How far in advance do Tier 2-4 suppliers receive usable forecasts, and how often do those forecasts change?
- Which demand commitments are strong enough to support lending, equity investment, or internal capital approval?

Questions for forum validation

- Where are demand signals least visible across the supply chain?
- What demand information would increase industry confidence to invest in capacity?
- Which demand and purchasing practices create the greatest production uncertainty?

Signal capture focus

Capture the affected tier, program horizon, investment decision at risk, minimum useful forecast window, and whether the constraint is volume uncertainty, schedule uncertainty, or funding uncertainty.

Internal traceability: SIG-0013, SIG-0016, SIG-0018 and related source-log entries.



04 Supplier Visibility and Critical Dependencies

Priority: Very high impact | Very high analytical value

Why this belongs in the pre-read

The most visible companies are not always the binding constraint. Risk often sits several tiers below the prime in raw materials, specialized processes, electronic components, or single-site production nodes.

Evidence baseline

- GAO reports that the Department of War (DOW) relies on a network of more than 200,000 suppliers, yet federal procurement data provides little visibility into where goods are manufactured or whether parts and materials are domestic or foreign. GAO found that existing visibility efforts provide limited insight into the vast majority of lower-tier suppliers.^[3]
- GAO also found that DOW supply-chain visibility efforts were fragmented, early in development, or limited to selected systems. The report recommends integrated data, clear responsibility, and testing contract requirements for country-of-origin information.^[3]
- AIA and PwC report that many essential space components are supported by three or fewer qualified domestic suppliers. The risk is not only supplier count; it is the concentration of qualified processes, specialized equipment, technical data, and experienced personnel at specific sites.^[1]
- Executive Order 14415 directs more comprehensive mapping of designated critical supply chains and calls for identification of vulnerabilities, bottlenecks, and single points of failure, including at prime and subcontractor tiers.^[4]

What the current evidence does not settle

- Which supply chain dependencies are visible to different stakeholders, including government, suppliers, and customers.
- The extent to which observed visibility gaps reflect data availability, data quality, access limitations, or commercial sensitivity.
- Which supply chain risks require supplier-level information and which can be adequately understood through aggregated or sector-level data.

Questions for forum validation

- Where are critical supplier dependencies creating the greatest resilience challenges?
- What information sharing would most strengthen supply chain visibility while protecting proprietary interests?
- Which indicators would best strengthen early awareness of emerging supply chain risks?

Signal capture focus

Capture the component or process, supplier tier, number of qualified sources, geographic concentration, data owner, visibility gap, and potential early-warning indicator.

Internal traceability: SIG-0014, SIG-0015, SIG-0017, SIG-0018 and supply-chain source-log records.



05 Critical Minerals and Specialized Materials

Priority: Very high impact | High urgency

Why this belongs in the pre-read

Space systems depend on materials markets that are often small, concentrated, and shared with defense, semiconductors, energy, and AI infrastructure. A disruption can affect multiple sectors at once, leaving little surge capacity available to space programs.

Evidence baseline

- USGS's Mineral Commodity Summaries 2026 provides the federal baseline for more than 90 nonfuel minerals and materials, including domestic industry structure, production, trade, reserves, and major market developments.^[5]
- CSIS reported in May 2026 that China accounted for approximately 99 percent of primary gallium production. It found that Chinese exports of unwrought gallium fell 94 percent in 2025, exports to the United States had effectively disappeared, and spot prices outside China had risen more than 200 percent since the start of 2025.^[6]
- DOD has identified rare-earth permanent magnets as essential to defense and commercial applications and has pursued a domestic “mine-to-magnet” supply chain to reduce single points of failure.^[13]
- Executive Order 14415 tightens waiver conditions for covered materials, requires mitigation plans, and directs development of a strategy to accelerate testing and qualification of new domestic and allied sources.^[4]
- NASA leadership has separately identified specialized materials, valves, and propulsion components as high-risk supply-chain areas requiring targeted attention and escalation.^[12]

What the current evidence does not settle

- Which material constraints are already affecting space delivery schedules, and which remain latent risks?
- Where can recycling, substitution, inventory, or allied sourcing provide near-term relief?
- How long does it take to qualify an alternate material or supplier once a dependency is identified?

Questions for forum validation

- Which materials or components present the greatest supply chain risk to the commercial space sector?
- What factors contribute most to supply constraints?
- What evidence distinguishes temporary disruptions from long-term supply chain dependencies?

Signal capture focus

Capture the material, application, source-country concentration, current lead time, price trend, substitute availability, qualification status, and expected time to establish a compliant alternate source.

Internal traceability: SIG-0014, SIG-0017 and critical-minerals source-log entries.



06 Qualification, Testing, Standards, and Compliance

Priority: High impact | Very high operational value

Why this belongs in the pre-read

A supplier may have the equipment to make a component but still be unable to enter the market. Qualification, certified testing, post-processing, cybersecurity, quality systems, and customer-specific approvals can turn nominal capacity into unavailable capacity.

Evidence baseline

- The AIA/PwC space supply-chain study identifies space-grade qualification costs, limited testing and post-processing capacity, and fixed regulatory burdens as barriers that slow new entrants and constrain smaller suppliers.^[1]
- The study reports that space-grade components may carry long lead times and qualification costs that are orders of magnitude higher than commercial equivalents. Limited access to certified facilities can add additional delay even when component manufacturing is available.^[1]
- Executive Order 14415 directs DOW to develop a strategy to accelerate testing and qualification of new sources and materials, including new procedures, methodologies, software, and resources, and to identify rules that block rapid qualification.^[4]
- NASA's 2026 supply-chain direction calls for clear mapping of critical-path elements and long-lead vendors and identifies targeted support for high-risk components and materials.^[12]
- AIA/PwC's production-readiness survey finds that products, processes, tooling, and operating models need to be designed for scalability from the start rather than relying only on incremental expansion of legacy production systems.^[2]

What the current evidence does not settle

- Which qualification requirements provide the greatest mission assurance value.
- Where access constraints are limiting effective use of test infrastructure.
- Where compliance requirements create unnecessary duplication across the ecosystem.

Questions for forum validation

- Which qualification requirements create the greatest barriers to market entry?
- Where are the greatest opportunities to improve access to qualification and testing?
- What evidence is needed to support broader adoption of commercial capabilities?

Signal capture focus

Capture the standard or requirement, owner, process duration, direct cost, queue time, failure/rework rate, duplication across customers, and whether the constraint is facility capacity, documentation, expertise, or policy.

Internal traceability: SIG-0013, SIG-0018 and related qualification/testing source entries.



07 Manufacturing, Infrastructure, and Workforce Capacity

Priority: Very high impact | High implementation value

Why this belongs in the pre-read

Capacity is a system. Production depends on facilities, power, logistics, equipment uptime, technical workforce, and site-specific approvals. Adding one element without the others may not increase output.

Evidence baseline

- AIA and PwC report that U.S. launch activity increased nearly tenfold in six years while aerospace industrial facilities average approximately 26 years in age. Production has risen largely through higher utilization of existing assets rather than broad replacement or expansion.^[1]
- The 2026 ramp-readiness survey identifies shortages of skilled technicians and aerospace-grade metals and components as simultaneous pressures on cost and output. It also notes that weak yields and unreliable supply can make scaling an existing value chain a poor investment.^[2]
- DOW's industrial strategy identifies workforce readiness as one of four core priorities and calls for advanced manufacturing workforce pipelines and broader recruitment into the industrial base.^[7]
- Vandenberg's 2026 "Spaceport of the Future" initiative frames power-grid expansion, environmental planning, logistics, shared-use infrastructure, and private capital as part of a single recapitalization challenge required to support higher launch cadence.^[11]
- NASA's Office of Strategic Capital identifies energy, infrastructure and storage; specialized materials and components; scaled launch infrastructure; and inhospitable-environment systems among its investment focus areas.^[9, 10]

What the current evidence does not settle

- Which facilities are operating near practical limits, and which limits are caused by staffing rather than equipment?
- Where do infrastructure constraints outside the factory—power, roads, ports, ranges, environmental review—limit production or delivery?
- Which workforce shortages constrain throughput today versus future expansion?

Questions for forum validation

- What factors most constrain production capacity?
- Which workforce capabilities present the greatest capacity constraints?
- What conditions would enable additional production capacity over the next 12 to 36 months?

Signal capture focus

Capture the production node, current utilization, constraint type, workforce role, expansion lead time, capital requirement, infrastructure dependency, and expected output gain if the constraint is removed.

Internal traceability: SIG-0015, SIG-0018, SIG-0019 and infrastructure/workforce source entries.



08 Capital Access and Small-Supplier Scaling

Priority: High impact | Very high leverage

Why this belongs in the pre-read

The supply chain may be most financially constrained where it is most operationally important. Primes can often finance expansion internally, while specialized sub-tier firms may lack the balance sheet, collateral, contract certainty, or customer concentration needed to fund new capacity.

Evidence baseline

- AIA/PwC's 2026 ramp-readiness findings indicate that capital is not evenly available: primes and OEMs are better positioned to fund expansion, while constrained sub-tier suppliers remain more dependent on risk-averse private capital. The survey notes that volume forecasts alone may not underwrite 2x or greater capacity.^[2]
- The space supply-chain study similarly concludes that budget instability and inconsistent demand signals discourage private investment in facilities, tooling, and workforce.^[1]
- NASA and SBA launched the SBIC-NASA Initiative in June 2026 to direct private and federally leveraged capital toward manufacturers and technology providers in NASA-identified supply-chain focus areas.^[9]
- NASA's Office of Strategic Capital states that the initiative is intended to help small businesses scale manufacturing, attain certification, and integrate into the space economy. Its focus areas include specialized components, materials, power, propulsion, infrastructure, software, avionics, and communications.^[10]
- DOW's industrial strategy and implementation activities also rely on public-private investment, Defense Production Act authorities, and flexible acquisition tools to strengthen production and supplier resilience.^[7, 8]

What the current evidence does not settle

- Which viable suppliers cannot obtain capital because the demand signal is not financeable?
- Where do federal financing programs fail to reach sub-tier companies because of eligibility, transaction size, speed, or administrative burden?
- What risk-sharing mechanisms would change an actual investment decision rather than simply reduce cost after the fact?

Questions for forum validation

- What investment needs present the greatest barriers to capacity expansion?
- What conditions would improve investment confidence?
- What conditions would enable greater private investment in supply chain capacity?

Signal capture focus

Capture the supplier tier, capital use, amount and timing, financing barrier, customer concentration, required demand commitment, expected capacity outcome, and whether the issue is access, price, speed, or risk allocation.

Internal traceability: SIG-0016 and capital-related supply-chain source entries.



09 Integrated Evidence Picture and Forum Validation Plan

Turning the pre-read into structured, non-duplicative signal capture

What the public evidence supports with relatively high confidence

- Space and aerospace demand is increasing faster than the industrial base can reliably scale across all tiers.^[1, 2]
- Demand signals become less stable and less visible farther down the value chain, weakening investment and production planning.^[2]
- Lower-tier supplier and country-of-origin visibility remains incomplete, limiting proactive identification of concentration and foreign-dependency risks.^[3, 4]
- Critical materials, qualification, testing, workforce, infrastructure, and capital constraints interact; treating them as isolated problems can shift rather than remove the bottleneck.^[1, 2, 7]
- Federal activity is moving toward mapping, accelerated qualification, domestic and allied sourcing, flexible acquisition, and targeted capital support, but implementation evidence remains limited because several initiatives are new.^[4, 8, 9, 10]

What the forum should addPost-forum synthesis logic

1. Close capture after all registration, plenary, panel, breakout, and read-back inputs are collected.
 2. Normalize and deduplicate entries without collapsing distinct operational experiences.
 3. Code each signal by theme, affected tier, friction type, time horizon, and evidence confidence.
 4. Classify each pre-read theme as confirmed, refined, challenged, or unresolved.
 5. Separate net-new signals from evidence that merely repeats the pre-read.
 6. Draft the “What We Heard” presentation and report only after the dataset passes review and traceability checks.
- Apply a minimum defensibility standard: describe a pattern as recurring only when it is supported by more than one independent input type, such as public evidence plus direct industry experience or multiple independent participant sources.



10 Bibliography and Source Notes

Public sources and internal methodology references used to establish the evidence baseline

- [1] [PwC and Aerospace Industries Association. "Strengthening America's Space Supply Chain: Built for Yesterday, Igniting Momentum for Tomorrow." March 17, 2026.](#) Industry study based on interviews, public data, and analysis of space supply-chain capacity, demand, qualification, testing, and regulation.
- [2] [PwC and Aerospace Industries Association. "State of the Ramp: Aerospace and Defense Production Ramp Readiness." July 2026.](#) Executive survey covering surge capacity, forecast distortion, supplier capital, workforce, materials, and production-system scalability.
- [3] [U.S. Government Accountability Office. "Defense Industrial Base: Actions Needed to Address Risks Posed by Dependence on Foreign Suppliers." GAO-25-107283. July 24, 2025.](#) Federal audit of supply-chain visibility, lower-tier supplier data, country-of-origin information, and foreign-dependency risk.
- [4] [The White House. Executive Order 14415. "Securing America's Defense Supply Chains and Ensuring Domestic Acquisition of Critical Materials." July 20, 2026.](#) Current federal direction on waivers, supply-chain mapping, risk mitigation, and accelerated qualification of domestic and allied sources.
- [5] [U.S. Geological Survey. "Mineral Commodity Summaries 2026." February 2026, updated through May 2026.](#) Official U.S. government reference for production, trade, reserves, and market developments across critical minerals and materials.
- [6] [Center for Strategic and International Studies. "The U.S.-China Trade Truce Has Not Solved the Gallium Problem." May 11, 2026.](#) Current analysis of gallium supply concentration, export flows, pricing, recycling, and short-term substitution limits.
- [7] [U.S. Department of Defense. "National Defense Industrial Strategy." Released January 12, 2024.](#) Federal industrial-base strategy covering resilient supply chains, workforce readiness, flexible acquisition, and economic deterrence.
- [8] [U.S. Department of Defense. "National Defense Industrial Strategy Implementation Plan." Released October 29, 2024.](#) Implementation framework for production, supply chains, allied collaboration, industrial cybersecurity, critical materials, and onshoring.
- [9] [National Aeronautics and Space Administration. "NASA, SBA Announce New Initiative to Scale American Space Economy." June 29, 2026.](#) Primary source describing the SBIC-NASA initiative and the use of public-private capital to support manufacturers and critical technologies.
- [10] [National Aeronautics and Space Administration. "NASA Office of Strategic Capital." Updated June 29, 2026.](#) Program source describing investment focus areas and intended support for manufacturing scale, certification, and supplier integration.
- [11] [U.S. Space Force, Vandenberg Space Force Base. "VSFB Announces 'Spaceport of the Future' Industry Day to Drive Large-Scale Infrastructure Modernization." July 6, 2026.](#) Primary source connecting launch capacity to power, logistics, environmental planning, shared-use infrastructure, and capital.
- [12] [National Aeronautics and Space Administration. "A Message From Administrator Jared Isaacman." May 22, 2026.](#) Primary source identifying long-lead vendors and high-risk supply areas, including valves, propulsion components, and specialized materials.
- [13] [U.S. Department of Defense. "DOD Looks to Establish 'Mine-to-Magnet' Supply Chain for Rare Earth Materials." March 11, 2024.](#) Primary source describing defense dependence on rare-earth permanent magnets and domestic source-development activity.



Internal methodology reference

Office of Space Commerce, Commercial Space Policy & Industry Strategy. *CSPIS Ecosystem Signal Intelligence Workbook v2.0 Pilot*. Reviewed August 5, 2026. Internal workflow source used for signal taxonomy, traceability, gap identification, normalization, and synthesis controls; not used as the sole basis for external factual claims.

Bibliography note. Numbered citations refer to the public sources above. The internal methodology reference documents the analytical workflow only. Source recommendations and policy positions remain attributable to the issuing organization and are not adopted as OSC findings by inclusion in this pre-read.