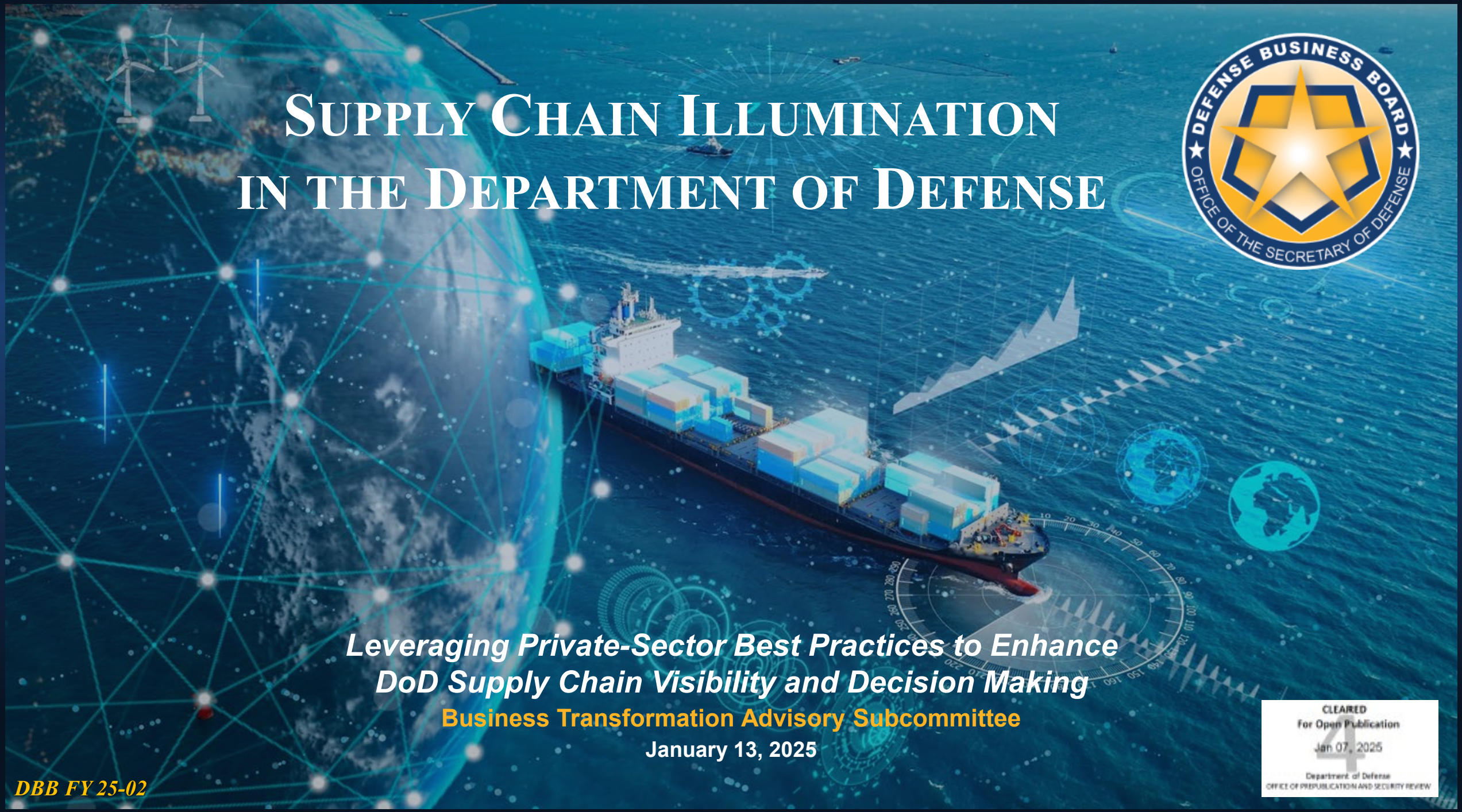


Supply Chain Illumination in the Department of Defense

Leveraging Private-Sector Best Practices to Enhance DoD Supply Chain Visibility and Decision Making

Business Transformation Advisory Subcommittee

January 13, 2025

DBB FY 25-02

MEETING AGENDA

TUESDAY, JANUARY 13, 2025
Virtual – Zoom

OPEN SESSION

3:00 – 3:05 PM	Begin Open Session – Ms. Cara Allison Marshall, DFO
3:05 – 3:10 PM	Chair's Welcome – HON Deborah James
3:10 – 4:30 PM	Presentation, Deliberation, and Vote *Supply Chain Illumination in the Department of Defense* Study – Mr. Craig Albright, Chair and GEN Joseph Votel, USA (Ret), Co-Chair DBB's Business Transformation Advisory Subcommittee *During this session, the Subcommittee will brief the Board, for its consideration, deliberation, and vote, on the findings, observations, and recommendations it compiled as part of a recent study examining DoD's supply chain illumination efforts – a critical capability for preserving national security and operational readiness.*
4:30 – 4:35 PM	Adjourn Open Session – Ms. Cara Allison Marshall, DFO

Begin Open Session

Ms. Cara Allison Marshall
DBB Designated Federal Officer

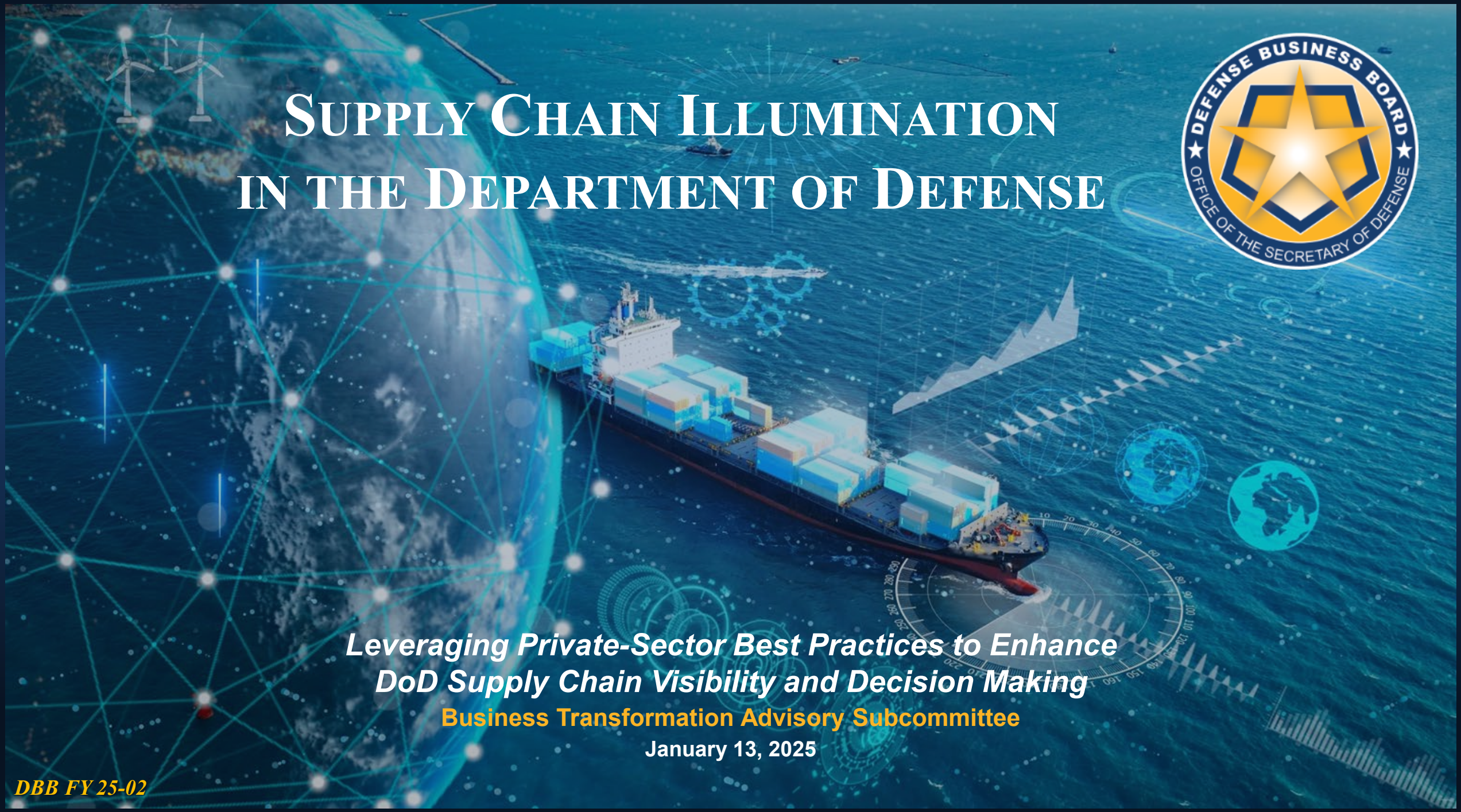
Chair's Welcome

HON Deborah James
Chair, Defense Business Board

Presentation, Deliberation, and Vote on *Supply Chain Illumination in the Department of Defense* Study

Business Transformation Advisory Subcommittee

Mr. Craig Albright, Chair
GEN Joseph Votel, USA (Ret), Co-Chair



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Contents

- Business Transformation Advisory Subcommittee Membership
- Terms of Reference
- Definition of Supply Chain Illumination
- Supply Chain Vulnerabilities in the National Spotlight
- Current State of the Department's Supply Chain Visibility
- Private-Sector Best Practices
- 6 Areas for Improvement
- 12 Recommendations
- Conclusion & Closing Comments

Business Transformation Advisory Subcommittee

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Study Co-Chair

GEN Joseph Votel
(US Army, Ret)
Study Co-Chair

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CAPT Chad Graham
Navy Military Representative

Janice Williams
Research Analyst and Editor

William McLaury
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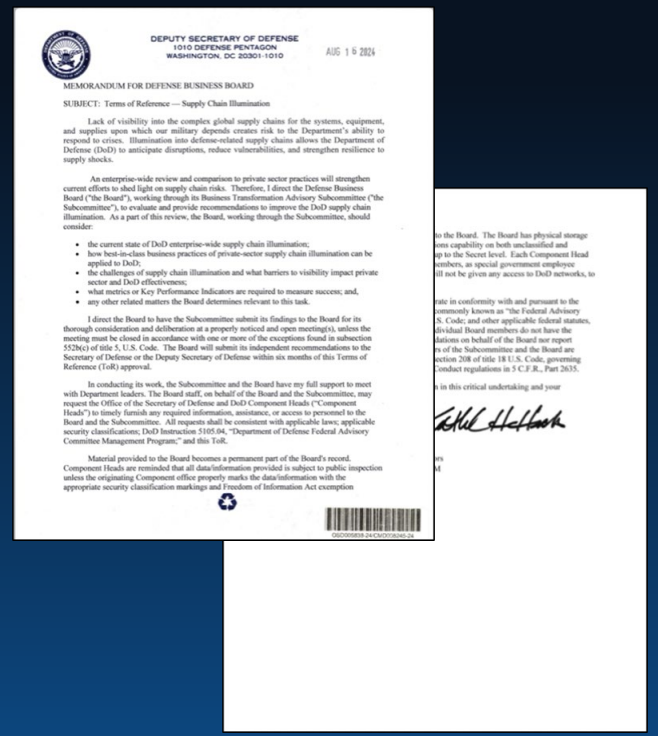
Terms of Reference

- Provide actionable recommendations to improve DoD supply chain illumination (SCI) and supply chain risk management (SCRM) – **a critical capability for preserving national security and operational readiness**;
- Evaluate the current state of DoD enterprise-wide efforts and determine how to apply private-sector best practices across the Department to build a resilient, diverse, secure supply chain aligned with the NDIS and NDAA;
- Address the challenges of, and barriers to, illumination; and
- Define appropriate metrics to measure success.



DEPUTY SECRETARY OF DEFENSE
1010 DEFENSE PENTAGON
WASHINGTON, DC 20301-1010

AUG 16 2024

MEMORANDUM FOR DEFENSE BUSINESS BOARD

SUBJECT: Terms of Reference — Supply Chain Illumination

Lack of visibility into the complex global supply chains for the systems, equipment, and supplies upon which our military depends creates risk to the Department's ability to respond to crises. Illumination into defense-related supply chains allows the Department of Defense (DoD) to anticipate disruptions, reduce vulnerabilities, and strengthen resilience to supply shocks.

An enterprise-wide review and comparison to private sector practices will strengthen current efforts to shed light on supply chain risks. Therefore, I direct the Defense Business Board ("the Board"), working through its Business Transformation Advisory Subcommittee ("the Subcommittee"), to evaluate and provide recommendations to improve the DoD supply chain illumination. As a part of this review, the Board, working through the Subcommittee, should consider:

- the current state of DoD enterprise-wide supply chain illumination;
- how best-in-class business practices of private-sector supply chain illumination can be applied to DoD;
- the challenges of supply chain illumination and what barriers to visibility impact private sector and DoD effectiveness;
- what metrics or Key Performance Indicators are required to measure success; and,
- any other related matters the Board determines relevant to this task.

I direct the Board to have the Subcommittee submit its findings to the Board for its thorough consideration and deliberation at a properly noticed and open meeting(s), unless the meeting must be closed in accordance with one or more of the exceptions found in subsection 552b(c) of title 5, U.S. Code. The Board will submit its independent recommendations to the Secretary of Defense or the Deputy Secretary of Defense within six months of this Terms of Reference (ToR) approval.

In conducting its work, the Subcommittee and the Board have my full support to meet with Department leaders. The Board staff, on behalf of the Board and the Subcommittee, may request the Office of the Secretary of Defense and DoD Component Heads ("Component Heads") to timely furnish any required information, assistance, or access to personnel to the Board and the Subcommittee. All requests shall be consistent with applicable laws; applicable security classifications; DoD Instruction 5105.04, "Department of Defense Federal Advisory Committee Management Program;" and this ToR.

Material provided to the Board becomes a permanent part of the Board's record. Component Heads are reminded that all data/information provided is subject to public inspection unless the originating Component office properly marks the data/information with the appropriate security classification markings and Freedom of Information Act exemption

Definition & Key Points

Supply Chain Illumination

Working Definition

- An analytical process that provides transparency and visibility into supply chain entities, products, parts and/or raw materials to identify risks and enable proactive mitigation and assured supply.
- “Continual visibility throughout the supply chain, by uncovering and mapping of multi-tier supplier network, provides an understanding of the tiers of a supply chain, a supply chain map, and vetting of suppliers against a defined set of supply chain criteria to identify and defend against threats.”
- An evolving (not static) risk view that must be continuously refreshed.

Useful Application

- Enable organizations to
  - Identify and mitigate supply chain risks.
  - Provide situational awareness for strategic planning.
  - Enable data-driven, proactive decision-making.
  - Enhance transparency and supplier collaboration.
  - Streamline operations and reduce costs.

Supply Chain Disruptions & Vulnerabilities in the National Spotlight

In today's world, it is impossible to ignore the impact of globalization on the supply chain, as nearly every level of the supply chain is affected. Disruptions happen every day, all around us.

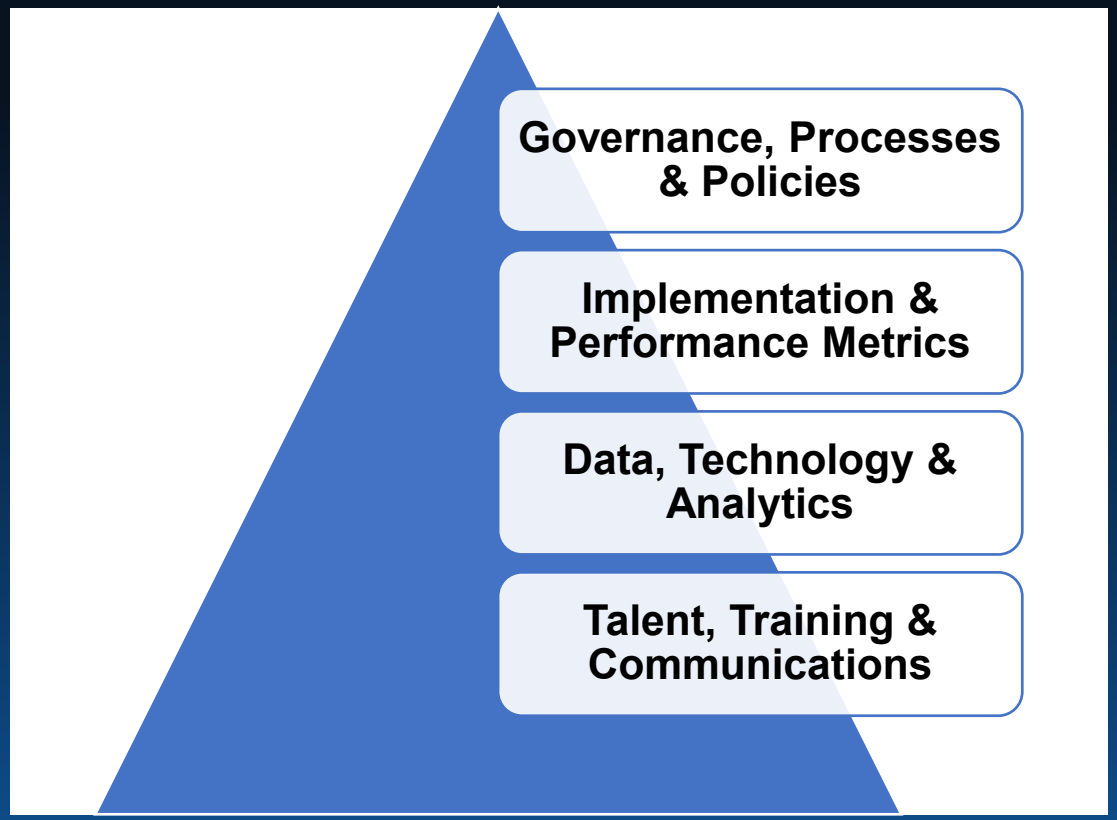
- **Critical Minerals in China**: China controls most of the global production for critical minerals like gallium, germanium, and antimony, which have widespread military applications.
- **Spruce Pine Mine**: Flooding in 2024 damaged the infrastructure, which supplies 70% of the world's high-purity quartz for semiconductors.
- **Baxter International**: A hurricane in 2023 disrupted production of IV solutions, impacting 60% of the U.S. supply.
- **Israel-Hamas War**: Disruptions in Red Sea trade routes have increased shipping costs and times and reduced shipping traffic by 50%, including a 79% decrease in bulk container shipping.
- **Ukraine-Russia War**: Grain exports through Black Sea trade routes dropped from 60 million tons a year to 30 million tons in two years, threatening food security in Africa and Asia.
- **Microelectronics Shortages**: Global semiconductor shortages have delayed advanced weapon systems, highlighting a reliance on foreign microchip suppliers.
- **Black Powder Shortage**: A 2021 explosion at the sole U.S. black powder facility exposed critical munitions manufacturing dependencies, despite its 2023 reopening.

Approach & Methodology

Study Approach

- ✓ Conducted six months of study;
- ✓ Completed extensive literature review, including white papers, published articles and books, and DoD strategic plans and supply chain reports;
- ✓ Interviewed 22 current and former DoD Agency and Military Department leaders, 26 private-sector industry executives, and many supply chain industry practitioners and subject matter experts; and
- ✓ Asked every interviewee: ”Given your experience, what is your recommendation to a large, complex organization such as the Department of Defense, seeking to rapidly improve its supply chain illumination?”

Supply Chain Illumination Best Practices



12 Best Practices

Governance, Processes & Policies

1. Leadership drives SCI and SCRM transformation and alignment.
2. Centralized data governance establishes data definitions and taxonomies and manages integration.
3. Risk-based assessment processes leverage multiple data sources to prioritize actions.
4. Deep and regular supplier engagement enhances data collection, trust, and resilience planning.

Data, Technology & Analytics

7. Critical supply chains are mapped with digital Bill of Materials (BOMs) and Software Bill of Materials (SBOMs).
8. SCI, SCRM, and IT leaders implement a defined stack of advanced technologies and modular solutions.
9. Near-real-time monitoring is selectively applied to critical risk areas.

Implementation & Performance Metrics

5. Illumination efforts focus on critical risk areas first.
6. Outcome-oriented metrics align illumination efforts with enterprise goals.

Talent, Training & Communications

10. SCI, SCRM, HR, and IT teams acquire and build talent internally to integrate legacy and modern technologies.
11. Training on illumination techniques and advanced technologies is actively promoted and incentivized.
12. A long-term vision for SCI guides efforts and addresses long-lead time needs.

Current State

Notable Early Progress

Current state of leadership direction and initiatives reflect notable progress in data integration, risk assessment, and proactive management, enhancing transparency and resilience across DoD supply networks.

DoD Leadership Direction

2022

- ✓ Securing Defense Critical Supply Chains; OSD - Feb 2022
- ✓ DoD SCRM Taxonomy Version 1.0; ASD(S) - Nov 2022

2023

- ✓ DoD SCRM Framework Report Phase I; ASD(S) - Feb 2023
- ✓ Supply Chain Resiliency & SCRM Resources; DAU - Feb 2023
- ✓ DoD Strategic Management Plan FY 2022-26; OSD - Mar 2023
- ✓ National Defense Industrial Strategy 2023; OSD - Nov 2023

2024

- ✓ National Defense Industrial Strategy Implementation Plan for FY 2025; USD(A&S) - Oct 2024

DoD Agency and MILDEP Initiatives

- ✓ USD (A&S) SCRM Integration Center
- ✓ CDAO's ADVANA Platform Integration
- ✓ OASD (IBP)'s DIBMAP for Industrial Base Visibility
- ✓ DLA's SCRM Office, Metrics-Driven Approach, and Data Acumen Training
- ✓ DoD CIO's Fulcrum IT Advancement Strategy
- ✓ DoD (Air Force, Navy, Marines) F-35 JPO & CDAO's SCREEn Program for F-35 Supply Chain
- ✓ The Army's JPEO for Armaments & Ammunition SQL Database and Visualization Tools
- ✓ The Navy's PEO for Integrated Warfare Systems Obsolescence Management

Current State

Six Areas for Improvement

1. Leadership alignment on illumination priorities is lacking.
2. Data governance, management, and integration is mostly decentralized.
3. Broad-based approaches to enterprise-wide illumination are slowing progress.
4. The Department lacks a defined stack of supply chain technologies.
5. DoD has not yet committed to internal integration and the talent required to provide necessary support.
6. DoD has no long-term SCI vision to guide future efforts.

Applying Best Practices to DoD

Finding

Leadership alignment on illumination priorities is lacking

Best Practice

- **Leadership drives SCI and SCRM transformation and alignment.**

Recommendations

- **1.1 <u>Leadership Alignment on Illumination Priorities</u>:** Direct Military Departments and Defense Agencies to identify and prioritize high-risk supply chain areas for illumination, align efforts with the Securing Defense-Critical Supply Chains report, and Conduct quarterly accountability reviews. (OSD and USD(A&S), 6 months)

Applying Best Practices to DoD

Finding

Data governance, management, and integration is mostly decentralized

Best Practices

- **Centralized data governance establishes data definitions and taxonomies and manages integration.**
- **Risk-based assessment processes leverage multiple data sources to prioritize actions.**
- **Deep and regular supplier engagement enhances data collection and resilience planning.**

Recommendations

- **2.1 Affirm USD(A&S)'s Authority for SCI and SCRM:** Revise DoDD 5135.02 to formally designate USD(A&S) as PSA for SCI and SCRM, accountable for centralizing leadership, enforcing data governance, and coordinating Department-wide SCI and SCRM efforts.
  (OSD with execution by USD(A&S), 3-12 months)
- **2.2 Adopt a Risk-Based SCRM Process:** Implement a DoD-wide taxonomy and process to address critical risks like geographic vulnerabilities and single-source dependencies, focusing on actionable insight.
  (USD(A&S), 6-12 months)
- **2.3 Facilitate Supplier Data Sharing**: Mandate contract clauses reflect modern data-sharing practices, secure protocols, and incentives to improve supplier collaboration and resilience.
  (USD(A&S), 6-12 months)

Applying Best Practices to DoD

Finding

Broad-based approaches to enterprise-wide illumination are slowing progress

Best Practices

- **Illumination efforts focus on critical risk areas first.**
- **Outcome-oriented metrics align illumination efforts with enterprise goals.**

Recommendations

- **3.1 Prioritize Risk Areas for Illumination:** Focus visibility efforts on high-priority programs, critical components, and major vulnerabilities concurrently, avoiding broad unfocused initiatives. (USD(A&S), 3 months)
- **3.2 Implement Outcome-Oriented Performance Metrics:** Implement metrics such as on-time delivery and single-source supplier risks to align visibility efforts with strategic resilience and mission-critical outcomes. (USD(A&S), 6 months)

Applying Best Practices to DoD

Finding

The Department lacks a defined stack of supply chain technologies

Best Practices

- **Critical supply chains are mapped and enhanced with digital Bill of Materials (BOMs) and Software Bill of Materials (SBOMs).**
- **SCI, SCRM, and IT leaders implement a defined stack of advanced technologies and modular solutions.**
- **Near-real-time monitoring is selectively applied to critical risk areas.**

Recommendations

- **4.1 Map the Critical Supply Chains and Implement Digital BOM/SBOM:** Automate data collection for Digital BOM/SBOM with traceability to streamline risk identification and enhance visibility across critical systems and components.
  (USD(A&S) supported by DLA, MILDEPs, and Defense Agencies, 6-12 months)
- **4.2 Implement a Defined Technology Stack with Federated Data Governance Policies:** Deploy a modular stack of advanced supply chain technologies leveraging commercial tools for flexibility and scalability, complemented by federated data governance policies that enable MILDEPs and Defense Agencies to configure systems independently while ensuring interoperability.
  (USD(A&S) with execution from MILDEPs and Defense Agencies, 12-18 months)
- **4.3 Deploy Near-Real-Time Monitoring Systems in Select Risk Areas:** Focus monitoring on high-risk components with refresh rates of at least 15 minutes to 1 hour, providing actionable insights to decision-makers for rapid risk mitigation.
  (USD(A&S), 6-12 months)

Applying Best Practices to DoD

Finding

DoD is not committed to internal integration and talent required

Best Practices

- **SCI, SCRM, HR, and IT teams acquire and build talent internally to integrate legacy and modern technologies.**
- **Training on illumination techniques and advanced technologies is actively promoted and incentivized.**

Recommendations

- **5.1 <u>Bridge Critical IT, SCI, and SCRM Talent Gaps</u>**: Address IT talent shortages in system integration and analytics through targeted hiring, contracting, and partnerships, leveraging private sector.
  (USD(P&R) with CTMO, 12 months)
- **5.2 <u>Expand Training on SCI and SCRM Techniques</u>**: Extend DAU training to include structured learning paths in SCI and SCRM, fostering innovation and building expertise across DoD.
  (DAU, 6-12 months)

Applying Best Practices to DoD

Finding

There is no long-term SCI vision to guide future efforts

Best Practices

- **A long-term vision for SCI guides efforts and addresses long-lead time needs.**

Recommendations

- **6.1 <u>Establish a Long-Term Vision to Guide Illumination Efforts</u>**: Build on existing DoD strategic management plans and strategies to develop an illumination roadmap aligned with strategic goals to sustain and evolve illumination efforts, incorporating data standards and modular technologies. Ensure alignment with budget and legislative requirements to drive progress and adaptability.
  (USD(A&S), 12 months)

Conclusion

- Good Early Progress, But Need Leadership, Data Standardization, and Systems/Tools to Scale
- Supply Chain Vulnerabilities Demand Urgent, Focused Action
- Pathway to Success Requires Enhancing Technology Capability and Strengthening Partner Collaboration
- A Vision for Supply Chain Illumination Will Ensure Adaptability

Adjourn Open Session

Ms. Cara Allison Marshall
DBB Designated Federal Officer


DEFENSE BUSINESS BOARD
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