GEOINT 2025

What You Missed

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Executive Summary

GEOINT 2025 brought together members of Government, industry, academia, and Nation partners to discuss pressing challenges facing the Geospatial Intelligence community. This year's theme was "Building a Secure Tomorrow Together."

As global threats evolve and the battlefield becomes an ever-growing tactical conflict, defense leaders are turning to geospatial intelligence (GEOINT) as an aid in its decision making. GEOINT 2025 highlights how real-time mapping, satellite imagery, and enhancements in AI analytics are transforming how the U.S and its allies are under and response to conflict.

Cybersecurity remains a foundational pillar. As GEOINT systems become more interconnected, the need for zero trust architectures and secure data pipelines is paramount. The National Geospatial-Intelligence Agency (NGA) is aligning with DoD-wide cybersecurity mandates, including CMMC compliance and SBOM requirements, to ensure resilience across the GEOINT enterprise.

Speakers also underscored the importance of modular, scalable systems. Whether it is edge-deployed sensors or cloud-based analytics platforms, the technology must be agile, adaptable, and built on open standards. The dynamic nature of today's operational environments demands tools that can evolve in real time.

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Artificial Intelligence (AI)

- **AI Adoption within Federal Agencies:** AI is essential for gaining insight and reducing burden for the workforce, however there is generational knowledge gap and fear around AI adoption for more senior level employees at the intelligence agencies **[Keynote: Tulsi Gabbard, Director of National Intelligence]**
- **Real-Time Intelligence:** AI enable frequent, terrain sensitive updates to digital twins, allowing for real-time decision-making. Assisting for national security application where speed and accuracy are essential **[Keynote: Digital Twin & GEOINT]**
- **Data Integration and Management:** AI supports the management and cleaning of messy, multi-format datasets. It also facilitates interoperability across platforms and data types, enhancing collaboration and improving overall data usability. **[Keynote: Digital Twins & GEOINT]**
- **AI Integration and Data Integrity:** AI and GenAI are being used to interpret quantum-derived data, including battle damage assessment and natural disaster modeling, however there are concerns with the use of GenAI as the service could be manipulated causing false outcomes effecting proper decision making **[Panel: Quantum Computing and Next Frontier of GEOINT]**
- **AI and Change Detection:** Large Language Models are being used to enhance change detection, curate and prioritize content for analysts, and build confidence in automated assessment **[Panel: Global Intelligence]**
- **Geospatial AI:** GeoAI tools are becoming open-source and easier to use. AI performance is expected to double by 2027 **[Panel: Next Gen AI in GEOINT]**

> *"AI will not replace Humans; however, Humans + AI will replace Humans without AI"*
>
> **Abe User, Co-Chief Executive Officer at Black Cape**

- **AI in the MARS Project:** The MARS Project began to integrate AI/ML to automate analysis and accelerate decision making, Analyst on average saved 21 hours a week **[Keynote: Katherine Bukolt, Defense Intelligence Agency]**

- **Year of AI:** FY25 has been stated as the "Year of AI" at the NGA. AI within the NGA is used for map production, change detection, and computer vision. **[Keynote: "Swimming in Sensors, Drowning in Data"]**

"More data does not equal more value – Data is only valuable when it helps humans solve problems"

Devin Brande, Director of the NGA Commercial Operations

- **System of System Management:** In space, AI is required to process and coordinate sensor data **[Keynote: General Chance "Salty" Saltzman, U.S. Space Force]**
- **MAVEN:** NGA MAVEN is an imagery analysis tool. MAVEN Smart System is an AI-based software package for all-source analysis currently MAVEN supports 20,000+ users across combatant commands **[Keynote: Vice Admiral Frank "Trey" Whitworth, NGA]**
- **Hybrid and Multi-Cloud:** AI is used in the cloud environment to assist in data tagging and implementation of zero trust. Alongside, AI helps management data sharing across various systems **[Pannel: Advancing Hybrid and Multi-Cloud In Modern IT Environments]**

Cybersecurity

- **Quantum Threats:** Quantum computers pose significant security risks due to vulnerabilities in current encryption standards. The United States has yet to fully implement effective safeguards for these systems. Robust cybersecurity protocols are essential to ensure the protection of quantum computing infrastructure. **[Panel: Quantum Computing and Next Frontier of GEOINT]**
- **Data Sharing Protection Policy:** NGA is updating policies to reflect modern cybersecurity needs. When modernizing legacy data systems, cybersecurity is recognized as a key challenge where industry support is needed. **[Keynote: Vice Admiral Frank "Trey" Whitworth, NGA]**
- **Data Tagging:** Robust Zero Trust implementation is required to allow the ability for stakeholders to access the data needed anywhere. Easy access to data is only possible if the data is properly tagged **[Panel: Advancing Hybrid and Multi-Cloud in Modern IT Environments}**
- **Cloud at the Edge:** Deploying cloud services at the edge introduces new cybersecurity challenges. Maintaining consistent architecture and robust security protocols is essential **[Panel: Advancing Hybrid and Multi-Cloud in Modern IT Environment]**

"Zero Trust is needed to secure our environments"

Mark Chatelain, Chief Information Officer at National Geospatial-Intelligence Agency

- **Cybersecurity in the MARS Project:** The MARS system highlights the need for industry collaboration to address cybersecurity issues while modernizing legacy systems **[Keynote: MARS Project Computing]**

Cloud

- **NGA Cloud Infrastructure:** The NGA stores more data in AWS cloud than other intelligence agencies. Because of this, strong cloud security protocols are required. **[Keynote: Vice Admiral Frank "Trey" Whitworth, NGA]**
- **Cloud at the Edge:** Cloud services are being deployed at the edge to support real-time operation and reduce latency with an emphasis on consistent architecture across edge mode **[Panel: Advancing Hybrid and Multi-Cloud in Modern IT Environments]**
- **Multi-Cloud Strategy:** Agencies are adopting multi-cloud environments to enhance flexibility and resiliency. To achieve this strategy, agencies are focusing on data colocation and sharing at the edge **[Panel: Advancing Hybrid and Multi-Cloud in Modern IT Environments]**
- **Cloud Security and Zero Trust:** Zero Trust is being implemented across cloud environments to secure data access and sharing. AI are assisting these solutions with data tagging, however challenges continue in standardized data tagging across the systems **[Panel: Advancing Hybrid and Multi-Cloud in Modern IT Environments]**
- **MARS Cloud Platform:** The MARS project is a cloud-based, AI-enhanced platform replacing legacy intelligence systems.
    - The project will enable machine-speed inventory counting and analysis.
    - Supports interoperability with intelligence partners.
    - Savings analysts a substantial portion of time (8 hours of work can be reduced to 4 minutes) **[Panel: Advancing Hybrid and Multi-Cloud in Modern IT Environments]**

Quantum Computing

- Quantum Computing is emerging as a transformational technology with the potential to revolutionize national security, intelligence analysis, and environmental monitoring. The GEOINT community is actively exploring its application and implications.
  - **Key Capabilities and Use Cases:**
    - **Quantum Sensing**: Enables detection of GPS-denied environments and space activities by measuring gravitational anomalies and other natural phenomena
    - **Environmental Monitoring**: Used to detect methane gas and determine various atmospheric types.
    - **Real-Time Decision Making**: Quantum systems are expected to support rapid, data-driven decisions in complex operation environments.
    - **Biological Application**: Potential for breakthroughs in understanding biological systems and environmental changes.
  - **Infrastructure & Development**
    - **Oak Ridge National Lab**: The national lab is building quantum networks at scale.
    - **Discovery**: A new quantum hybrid machine "Discovery" is expected to be released by 2026-2027 under the Department of the Interior
  - **Global Investment and Competition:** In 2024 **$55 Billion** was invested globally in quantum computing: **$15 Billion** by China and **$7.5 Billion** by the United States **[Keynote: Quantum Computing and Next Frontier of GEOINT]**

Doing Business

- **Small Business Opportunities:** Small businesses are encouraged to engage with members of the intelligence community, however these businesses face barriers due to outdated procurement laws and limited access.
  - Agencies are trying to move aways from relying on the same Primes contractors.
  - Theirs is a push to bring small businesses that can deliver at a scale and price compared to the standards FSIs **[Keynote: Tulsi Gabbard, Director of National Intelligence]**
- **Outdated Procurement Process:** There is a call to remove the "Old-Fashion" process that slows down technology acquisitions. Agencies are urged to buy commercial solutions that meet 80% of the agencies' needs rather than building a solution out of scratch **[Panel: Advancing Hybrid and Multi-Cloud in Modern IT Environments]**
- **Current Available Contract Vehicles and Programs:**
  - **LUNO A/B Contracts:** Contract vehicles created by the NGA to engage multiple vendors in delivering AI, Cloud, and Geospatial Services **[Keynote: "Swimming in Sensors, Drowning in Data"]**
  - **Project Tearline:** Initiative by the NGA to produce open-source, public-facing intelligence **[Keynote: "Swimming in Sensors, Drowning in Data"]**
  - **MARS Project:** Cloud-based, AI-enhanced data environment developed by the Defense Intelligence Agency to replace the legacy Modernized Integrated Database system by FY26 **[Keynote: MARS Project Computing]**
  - **MAVEN AI Center:** A centralized AI initiative under the NGA, to provide AI tools and models to combatant commands and their intelligence analysts **[Keynote: Vice Admiral Frank "Trey" Whitworth, NGA]**
  - **GAMBLER Program:** Program under the NGA focused on geospatial AI experimentation and innovation to evaluate and validate new AI models and tools in operational environments **[Keynote: Vice Admiral Frank "Trey" Whitworth, NGA]**
  - **MAPSTER Program:** A tool/platform used by the NGA to support map productions and geospatial data visualization **[Keynote: Vice Admiral Frank "Trey" Whitworth, NGA]**

Workforce

- **AI Adoption in the Workforce:** The success of innovative technology adoption relies heavily on how much leadership uses it **[Keynote: Katrina Mulligan, OpenAI]**
- **Lower Barrier to Entry:** The GEOINT field is becoming more accessible through low/no-code tools and open-source platforms like GitHub. These services allow students and creative minds to engage with geospatial data at a low cost **[Keynote Digital Twins and GEOINT]**
- **Next Generation of GEOINT Professionals:** St. Louis is being developed as a national hub for geospatial talented, supported by university partnership, the T-Rex innovation center, and the NGAA Employment Pilot Program **[Keynote: Senator Eric Schmidt]**
- **Workforce Readiness with AI:** The next generation of the workforce is already adopting AI tools. However, there is a concern about whether they will evaluate AI outputs or blindly trust the results **[Panel: Next Gen-AI]**

Appendix: GEOINT 2025 Sessions Attended

Monday, May 19th

GEOINT 2025 Opening Ceremony

- *Robert Carillo: Chairman of the Board at USGIF*
- *Ronda Schrenk: Chief Executive Officer at USGIF*

Keynote: Major General Paul Lynch

- *Robert Carillo: Chairman of the Board at USGIF*
- *Major General Paul Lynch: Deputy Assistant Secretary General for Intelligence, NATO International Military Staff*

Keynote: Senator Eric Schmitt

- *Eric Schmitt: Senator at U.S. Senate, Congress (R-MO)*

Keynote: The Honorable Tulsi Gabbard

- *Tulsi Gabbard: Director of National Intelligence of the United States*

Keynote: Digital Twins & GEOINT: Transforming Intelligence with 3D Analytics

- *Ronda Schrenk: Chief Executive Officer at USGIF*
- *Patrick Cozzi: Chief Platform Officer at Bentley Systems*

Panel: Quantum Computing and the Next Frontier of GEOINT

- *Jen Dietz: Director, Partnerships and Alliances at Oracle*
- *Budhu Bhaduri: Director of Science, Programs and Partnerships at Oak Ridge National Laboratory*
- *Gabe Chang: Quantum Ambassador at IBM*
- *Jen Sovada: General Manager, Public Sector at Claroty*

Panel: Global Intelligence, Local Impact: Source and Analysis at the Speed of Mission

- *Gary Dunow: Executive Vice President at USGIF*
- *Tracy Maloney: Deputy Director of Source Operations at National Geospatial-Intelligence Agency*
- *Shelby Pierson: Director of Analysis at National Geospatial-Intelligence Agency*

Tuesday, May 20th

Panel: GEOINT as the Foundation of Interoperability

- *Melissa Best: Assistant Secretary of Intelligence and Insight at Australia Geospatial Intelligence Organization*
- Katie Davies: Senior UK GEOINT Officer at UK Strategic Command
- Jeff Builta: Director, GEOINT Functional Management at National Geospatial Intelligence Agency
- Eric Vandenberg: Director, General Intelligence Enterprise at Canadian Force Intelligence Command

Keynote: Katrina Mulligan

- *Katrina Mulligan: National Security Lead at OpenAI*

Panel: Next-Gen AI in GEOINT – Autonomous Analysis and Decision Making

- *Sanjay Kumar: Chief Executive Officer at Geospatial World*
- *Nadine Alameh: Executive Director at Taylor Geospatial Institute*
- *Taegyun Jeon: Founder and CEO at SI Analytics*
- *Don Polaski: Vice President at Booz Allen Hamilton*
- *Abe Usher: Co-Chief Executive Officer at Black Cape*

Keynote: Update on MARS Program and the Intersection with GEOINT

- *Kristen Ryan: Senior Director, Intelligence Community at Oracle*
- *Katherine Bukolt: MARS Project Manager at Defense Intelligence Agency*

Keynote: Swimming in Sensors, Drowning in Data

- *Kristen Ryan: Senior Director, Intelligence Community at Oracle*
- *Devin Brande: Director of the NGA Commercial Operations Group at National Geospatial-Intelligence Agency*

Wednesday, May 21st

Keynote: General Chance "Salty" Saltzman

- *Dan Smoot: Chief Executive Officer at Maxar Intelligence*
- *General Chance "Salty" Saltzman: Chief of Space Operations at U.S. Space Force*

Keynote: Vice Admiral Frank "Trey" Whiteworth

- *Yvette Cesario: Director of National Security Sales at AWS*
- *Frank Whitworth: Director of National Geospatial-Intelligence Agency*

Panel: Advancing Hybrid and Multi-Cloud in Modern IT Environments

- *Mark Andress: Global Vice President, Defense and Intelligence at Oracle*
- *Keith Barber: Director of Strategy and Engagements at BAE Systems*
- *Mark Chatelain: Chief Information Officer at National Geospatial-Intelligence Agency*
- *Chris Grant: Chief Architect of the Enterprise Analytics Portfolio at Lockheed Martin*
- *Kevin Hoy: Federal Deployment Strategist at Scale AI*