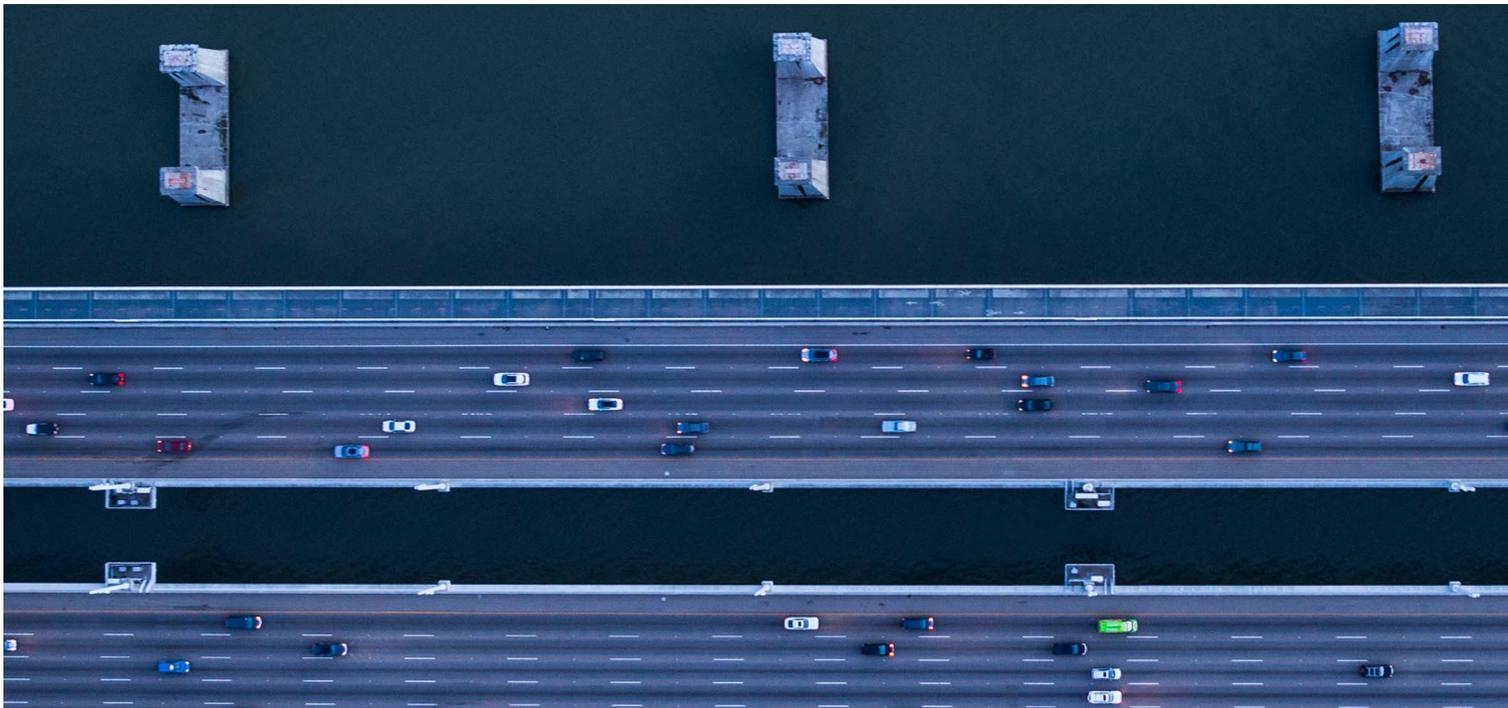


Navigating the Intelligence Community IT Roadmap

GDIT's Guide to Mission Technology

Leveraging open-source, vendor-agnostic technology
and decades of customer experience to achieve the
Intelligence Community's vision for data sharing.

BY SCOOP NEWS GROUP

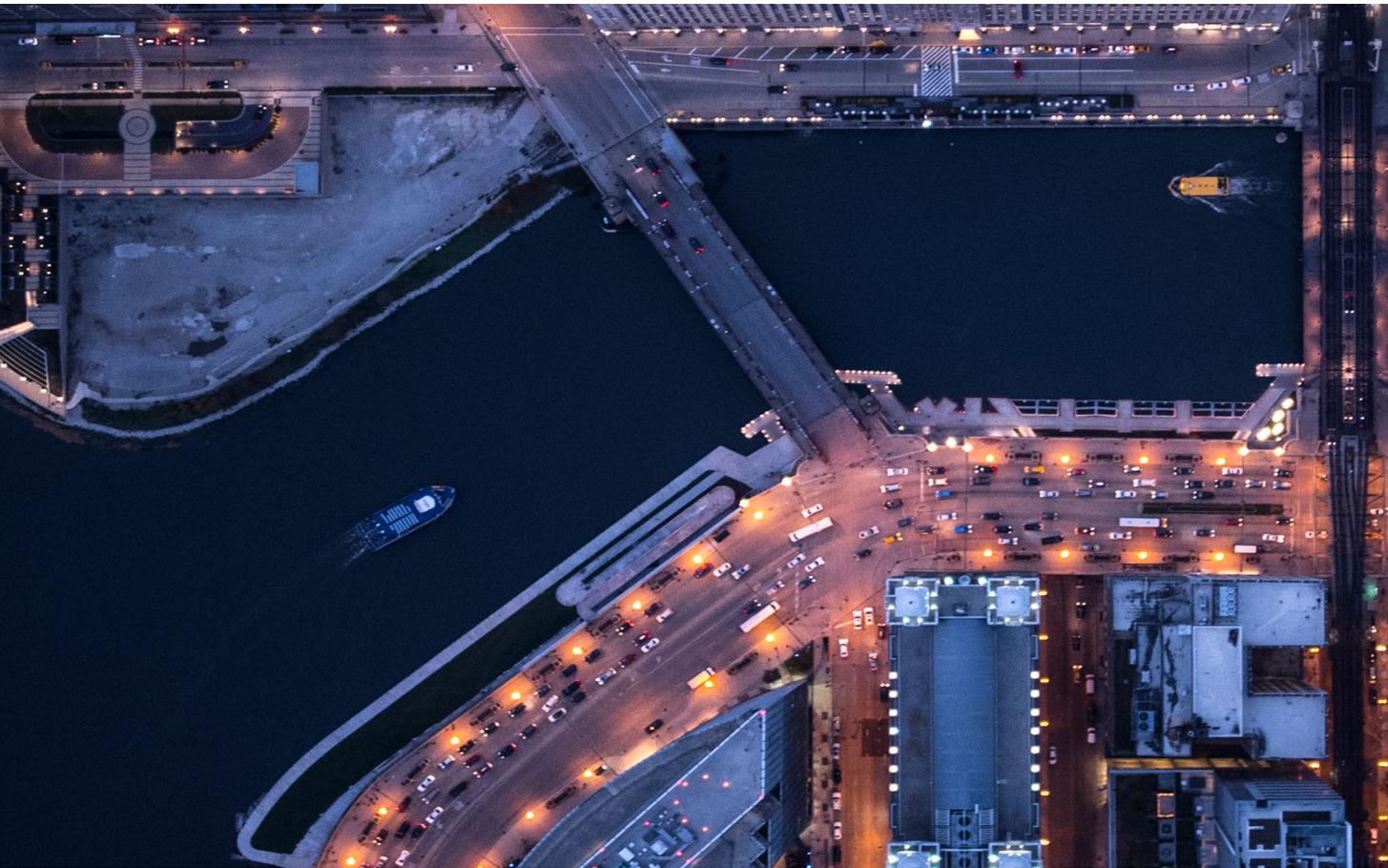


When the Director of National Intelligence Avril Haines and Intelligence Community CIO Adele Merritt issued their five-year IT roadmap for the U.S. Intelligence Community (IC) last May, they made three points abundantly clear:

- The IC faces an increasingly complex and dynamic threat landscape where information is “moving at an unprecedented pace.”
- To keep pace, the IC must embrace new technologies that “can reshape the intelligence process and rapidly deliver valuable intelligence to policymakers, operators, and warfighters.”
- At stake: The IC “must advance our IT until it represents a strategic advantage over our rivals.”

The IC’s [vision document](#), which reflects the views of more than 100 technical leaders across the intelligence community, lays out five imperatives:

- 1 | **Fortify** the mission with a reliable, adaptable and resilient digital foundation that can scale to meet future compute, storage and transport demands and operate in disconnected and contested locations.
- 2 | **Assure** the mission with robust cybersecurity built on Zero Trust and modernized enterprise risk management to protect sensitive data and systems.
- 3 | **Enable** the mission with modern technologies and practices to support dynamic, seamless collaboration with external allied partners and the private sector.
- 4 | **Enhance** the mission by shifting to a data-centric paradigm emphasizing end-to-end data management, accessibility, interoperability and advanced insights.
- 5 | **Accelerate** the mission with advanced technologies while ensuring the workforce can leverage these advancements.



AT ISSUE: Individually, the 18 civilian and defense agency elements that make up the Intelligence Community, have some of the most advanced computing power available anywhere in the world. The challenge for IC technical leaders, however, remains how to move information beyond hardened enclaves, tradition-bound missions, protracted funding silos, and intra-agency priorities. These technical issues continue to hamstring analysts and operators from sharing information across the IC and with U.S. allied partners — often when every minute counts.

- Compounding these challenges is a dense thicket of often-incompatible mechanisms for handling and discovering data across the community, maintains **Eric Adams**, geospatial expert and program manager at General Dynamics Information Technology (GDIT).
- Moreover, “you’ve got multiple enclaves in which data in theory is discoverable,” he says, referring to the NIPR (non-classified), SIPR (secret) and JWICS (top secret and Sensitive Compartmented Information) networks used by the Defense Department and the IC. “The process to put data into these networks needs to be easier and faster for users, and the data extraction process improved by making data more discoverable,” he says.
- Sharing data between IC elements and partners is further complicated by the inconsistency of data standards they use, the sheer scale of data involved, and the general lack of authoritative data managers to enforce data models, he explains.

“ The process to put data into these networks is cumbersome, and the process to get data out is challenging because it’s not easily discoverable.”



ERIC ADAMS
Geospatial Expert and
Program Manager, GDIT

Platforms of progress

However, GDIT has designed highly developed platforms that are engineered and deployed and capable of the prospective heavy lifting necessary to facilitate IC data sharing in connected and disconnected environments, according to Adams and others at GDIT. To name a few:

[DeepSky](#) is a private, multi-cloud, on-prem data center environment developed and maintained by GDIT. It facilitates collaboration with technology providers, partners, and academia, allows the low-risk testing of technologies and emerging capabilities with government agencies, and allows the development of prototype solutions.

- “It’s really difficult to ingest massive amounts of data from a bunch of tools and make it usable for an engineer, an analyst or an executive. So DeepSky helps make those tools work together,” says **Ryan Deslauriers**, director of cybersecurity at GDIT.
- DeepSky, for instance, currently enables teams handling vast amounts of geospatial data to model customer enterprise environments and test hardware, software, and advanced AI and machine learning tools. They start with unclassified but representative environments, providing confidence in knowing that successfully transferring, testing, and coding to classified environments is relatively easy and secure.
- The DeepSky platform is yielding other benefits. It helps agency leaders discover what’s working at different agencies and test technology solutions that have been successful at one agency for the benefit of other agencies, says Deslauriers.

Mission Partner Environments: Historically, mission partner networks were created to solve specific problems and were developed as one-offs. The thinking has evolved to [Mission Partner Environments](#) (MPEs), which represent the next generation of information-sharing environments. This technology is designed for continuous interoperability, enabling the secure sharing of sensitive and classified information with trusted military and coalition partners.

- MPEs make it possible to take a “full report, break out what can and can’t be released, and push it to the appropriate network virtually and automatically so that information gets to relevant users where they are in a timely fashion,” explains **Jennifer Krischer**, a former U.S. Air Force intelligence officer who now serves as vice president for defense intelligence at GDIT. GDIT supports the largest coalition intelligence sharing program in existence involving 70 coalition partners and has successfully applied AI and automation solutions to ingest and disseminate intelligence. This enables secure access to information and faster decision-making at the tactical edge.

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Director of Cybersecurity,
GDIT



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JENNIFER KRISCHER
Vice President for
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- GDIT’s solution has been developed alongside customers to fit their specific mission needs for the last two decades. MPEs use highly refined classification and access restrictions to distribute intelligence automatically and securely.
- GDIT’s expertise in developing and implementing vendor-agnostic, data-sharing techniques on a global scale is evidenced by its work supporting recent [military exercises](#) sponsored by the U.S. Indo-Pacific Command.
- According to Krischer, more than 50 IC units, including users in the field, are adopting the MPE model to facilitate intel-sharing.

[Regional Edge Nodes](#) were designed by GDIT to support information sharing in connected and disconnected environments. Edge nodes use a secure “data mesh” architecture that ensures seamless data access to data lakes for military and IC applications.

- Edge nodes “make networks more resilient if connections get severed. But when you’re in a normal state, they also allow data to get pushed out to analysts and users at the edge faster,” says **Chris Nigon**, senior project manager at GDIT. “The shift from hub-and-spoke to a data mesh network model is transformational for IC users.”
- “A lot goes into creating edge nodes that can support a site completely going offline for extended periods and then automatically catch up and synchronize with local data,” he notes. “It’s not something you can get from a

commercial off-the-shelf product. It requires expertise in deploying infrastructure, local DNS, identity management, authentication, local compute, storage, and GPUs. It’s almost like building an on-prem, content delivery network.”

[Raven](#) is a mobile command center tech suite developed by GDIT that fits in the back of a truck. It extends and deploys the data mesh concept to mobile environments and can be utilized in diverse scenarios, such as disaster relief, special forces operations, or disconnected environments.

- Raven enables operators and first responders to rapidly collect and disseminate data from the tactical edge directly to users on the ground and back to the enterprise.
- And it also delivers robust AI/ML services – traditionally reliant on the cloud – to users at the tactical edge, significantly enhancing the speed and impact of

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CHRIS NIGON
Senior Project Manager,
GDIT



decision-making, regardless of whether field personnel are connected or disconnected from the enterprise.

- Raven is an example of how GDIT “enables teams to conduct their mission without having to develop, build, maintain, and operate the services internally,” notes **Nicholas Townsend**, senior director at GDIT.

Federated Data Fabric creates a unified data environment through a centralized service platform designed to streamline data curation, management, and dissemination and enable seamless access to data independent of its source or security level.

- It allows users on the network’s edge to discover, request, publish and subscribe to information within a federated network environment.
- “Data can get federated to data fabrics with minimal oversight, which can lead to data being disseminated that is non-authoritative and unchecked,” explains Adams. “Then if an individual goes to the data fabric, and they want information about a certain area, it will search all the portals that it’s federated with and make posted information available to appropriate users.”
- A critical element GDIT brings to the table, adds Adams, is a deep understanding of how to implement data tagging and management standards essential for managing large volumes of data. “It’s not just about the hardware, software and infrastructure. It’s also about policy and administrative ties, getting the red tape out of the way, and creating agnostic data access,” he explains.

Digital Accelerators are all about using advanced and emerging technologies to manage the ever-increasing scale, speed and complexity of today’s information universe. GDIT’s cadre of former military and intelligence specialists and experienced engineers are constantly developing new ways to harness these technologies to meet the specialized needs of the intelligence community.

- One example involved expanding the high-performance GPU computing (HPC) capabilities siloed within an

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CHAZ MASON
Mission Engineering
and Delivery Lead, GDIT

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NICHOLAS TOWNSEND
Senior Director,
GDIT

agency research department and making that capability available to the broader agency. “These technologies are temperamental and expensive. It’s very difficult for an agency as a whole to allocate money for it,” says **Chaz Mason**, mission engineering and delivery lead at GDIT. “What we were able to do was demonstrate the applicability of HPC to solving real-world problems that they had never thought possible.”

- “Our knowledge of both what this capability involves from a technology standpoint and also how we could integrate it into the enterprise allowed us to take this capability from a stovepipe capability to an enterprise asset within 90 days,” he says.
- The impact: “By having an on-prem high-performance compute cluster available, the agency was able to download highly classified data from overhead sources to train their models that otherwise would have taken days or weeks to run, depending on the problem set, and would be prohibitively expensive in the cloud.”



Differentiation by design

These and other platforms that GDIT has developed for its military and IC customers reflect a deeper approach and philosophy to meeting the government's needs:

DEDICATION TO OPEN-SOURCE AND VENDOR-AGNOSTIC SOLUTIONS

GDIT is technology agnostic and develops mission solutions to meet customers' specific requirements. "We always look at designing solutions from the lens of avoiding vendor lock-in, remaining flexible, and understanding how technology and mission requirements evolve over time," says Chris Nigon.

DEEP TECHNICAL EXPERTISE AND CUSTOMER INTIMACY

GDIT hires professionals with extensive defense, IC and technical experience who uniquely understand government mission needs. Today, GDIT's staff of 30,000 professionals support customers in over 400 locations across 30 countries; 25%+ of the workforce are veterans.

COMMITMENT TO WORKFORCE DEVELOPMENT

"One of the biggest challenges facing our industry is ensuring our workforce has relevant technology skills vital to our national security," says Mason. "Our workforce two to five years from now will need to be different from what it is today and prepared to take advantage of new technology." Recognizing this, GDIT doubled its investment in tuition and technical training programs in 2023. It quadrupled the number of certifications in cyber, AI, and cloud. More than 20,000 employees have taken at least one of our technology upskilling programs. Rotation programs provide flexibility, career growth opportunities and a break from SCIF environments.

On average, 5,000 GDIT employees are promoted or move into new roles each year.

The IC's information technology roadmap represents a clear-sighted view of the changes that must be made to maintain a strategic advantage in protecting the nation's national security. Those close to the technology know the scale and complexity of what must be done remains a daunting agenda.

The good news is that much of the foundational work and practical knowledge needed to help the IC get started already exists.



“ GDIT is committed to supporting the intelligence community by providing technology to support mission operations and outcomes. While reading the report from ODNI, I was proud to recognize leading technologies from experts I see every day. I am excited for the opportunity to highlight these successes and applications across the national security community.”



AARON BEDROWSKY
Senior Vice President, Intelligence
and Homeland Security, GDIT

[Learn more](#) about how GDIT is helping IC and military customers address the complex challenges of the 21st century.

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