



GEOINT: Surveying the 10-Year Horizon

May 2023



Introduction

The **geospatial intelligence (GEOINT)** revolution is upon us.¹ Data is growing exponentially, GEOINT missions are increasingly complex, and technology is evolving faster than many organizations can manage. Where will this movement lead us? What does the workforce need? How can we make the best use of emerging technology?

For the GEOINT 2023 Symposium's **Surveying the 10-Year Horizon** report, MeriTalk, in collaboration with the U.S. Geospatial Intelligence Foundation (USGIF), surveyed 100 GEOINT stakeholders within the Federal government, state and local government, and higher education. We asked stakeholders to envision the next decade of geospatial intelligence in terms of workforce, technology, and processes.

The study explores:

- Current GEOINT capabilities and efforts
- Priorities for the next decade of the tradecraft
- Anticipated challenges
- Recommendations for preparing the GEOINT workforce

¹ [NGA Tech Focus Areas 2022](#)

For this report, a **GEOINT stakeholder** includes anyone working with, using, supporting, or educating professionals on remote sensing, geospatial information, or data information and intelligence.



Executive Summary

The future is bright, but largely unplanned:



Three in four are **optimistic about the future** of GEOINT, but only one-third have a formal strategy for their 10-year vision

82%

agree government organizations are underutilizing GEOINT technology

Organizations are working to close the gap between data and insights:



Fewer than half of GEOINT stakeholders are very confident in key **GEOINT-related capabilities**, including data collection, analysis, and security



Going forward, GEOINT stakeholders see a need for improved **data analytics** and say it'll be a top area of investment over the next two years

GEOINT leaders need both hard and soft skills for long-term success:



Workforce skills gaps top the list of foreseeable challenges. The most important skills for GEOINT professionals are **critical thinking** and **data visualization**



Additional workforce development areas include **recruitment/retention** and **soft skills**, such as problem solving

GEOINT Tech Report Card

GEOINT stakeholders are **generally positive** about their organization's data-related capabilities. Still, just 39% are very confident in their data-driven decision-making, and even fewer grade themselves an "A" on their efforts to meet the National Geospatial-Intelligence Agency's (NGA) 2025 objectives.²

How confident are you with your GEOINT-related capabilities?



Data collection: **48%** very, **39%** somewhat

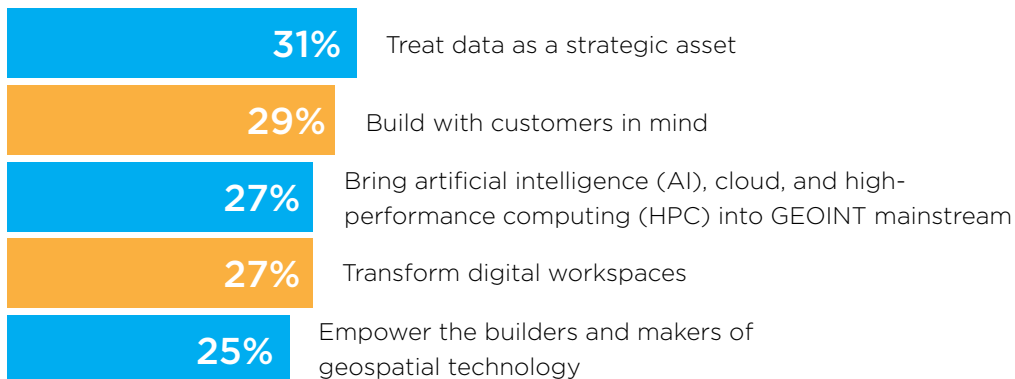
Data analysis: **46%** very, **42%** somewhat

Data security: **41%** very, **41%** somewhat

Data-driven decision-making: **39%** very, **43%** somewhat

69% say their organization has far more GEOINT data than they are able to analyze (**27% agree strongly**, **42% somewhat**)

When asked to think about their progress against the five initiatives set out by NGA to achieve its 2025 desired target state², fewer than one in three graded themselves an "A"



² NGA Technology Strategy



The Optimism Gap

While **76%** of GEOINT stakeholders are **optimistic** about the future of GEOINT and **98%** have taken at least one step to prepare for future GEOINT advancements, just one in three (**33%**) has created a formal strategy for their 10-year vision.

How optimistic are you in the future of GEOINT?



Very optimistic
37%



Somewhat optimistic
39%



Somewhat pessimistic
12%



Very pessimistic
8%



Unsure
4%

What steps has your organization taken to prepare for the next 10 years of GEOINT?³

- Evaluated computing, network, and/or storage needs **46%**
- Increased workforce training **45%**
- Modernized infrastructure **42%**
- Improved cybersecurity hygiene **42%**
- Improved ability to leverage industry-leading technology **41%**
- Enhanced data standards/governance **38%**
- Accelerated cloud adoption **35%**
- Increased use of automation **35%**
- Appointed a leadership team to spearhead our strategy **34%**
- Created a formal strategy for our 10-year vision **33%**

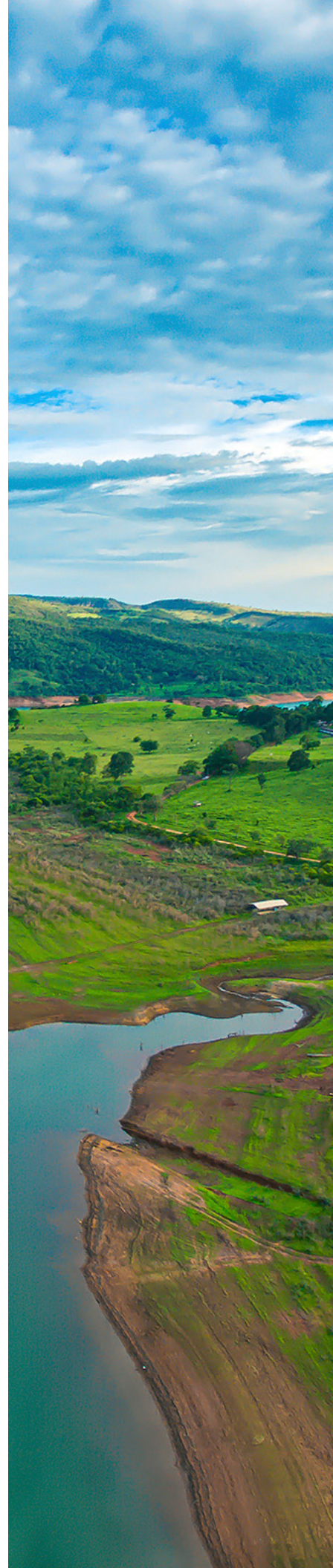
Organizations follow a similar trend with AI:



While most GEOINT stakeholders (**84%**) feel organizations must accelerate the adoption of AI-enabled GEOINT capabilities to speed mission outcomes, only **37%** have a formal strategy for adapting the GEOINT workforce to AI – showing no significant change from 2020⁴.

³ Respondents asked to select all that apply

⁴ MeriTalk and USGIF's Mapping AI to the GEOINT Workforce, 2020



Future Visions

When asked to **envision the next 10 years** of GEOINT, stakeholders anticipate their organizations will focus on improving their ability to work with emerging technologies and system/application performance. They expect to struggle with resource gaps and cybersecurity threats.

What are your organization's top GEOINT priorities over the next 10 years?³



#1 Improve ability to adopt and work with emerging technologies **41%**



#2 Improve system/application performance **40%**



#3 Increase partnerships with leading private sector technology companies, academia, and global allies **39%**

#3 Improve operational efficiency **39%**



#5 Improve the speed and accuracy of data-driven decisions **37%**

What are the biggest challenges you expect your organization to face?³



#1 Workforce skills gap **43%**



#2 Cybersecurity concerns/cyberattacks **40%**

#2 Budgetary constraints **40%**

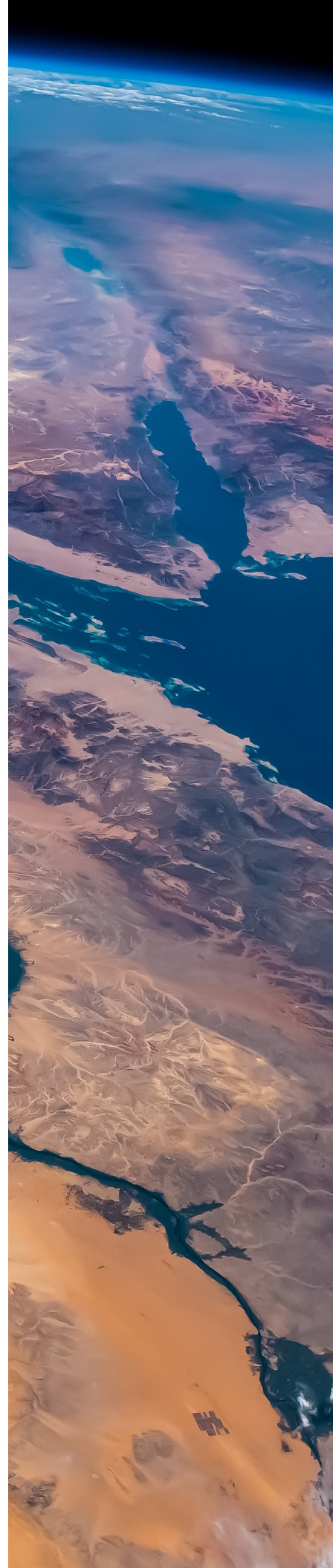


#4 Lack of leadership buy-in on modernization needs/efforts **34%**



#5 Ever-increasing scope of the digital ecosystem **31%**

³ Respondents asked to select all that apply



Help Wanted From Critical Thinkers

Three in four GEOINT stakeholders say their organization will **grow their GEOINT workforce** in 2023. The most sought-after skills are critical thinking and data visualization.

What skills will be important for GEOINT professionals to acquire over the next 10 years?³

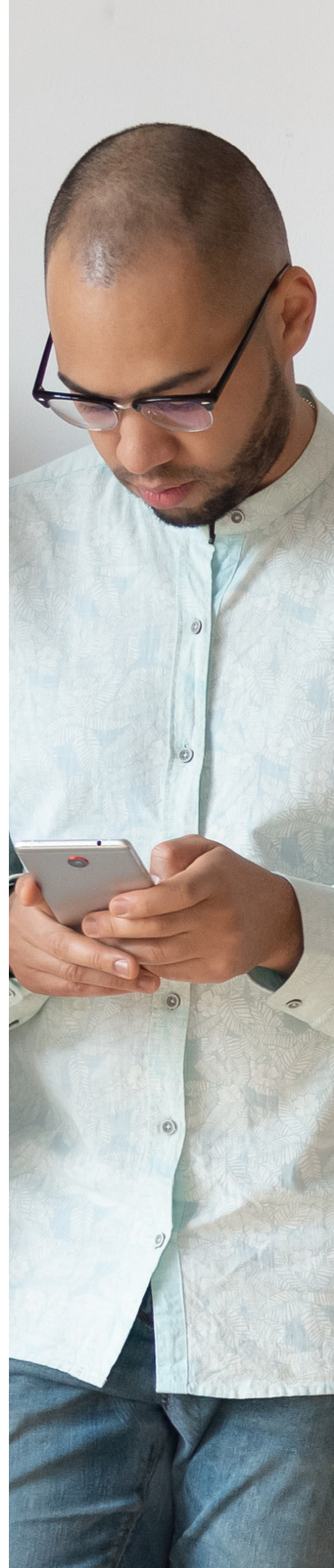


- #1 Critical thinking **46%**
- #2 Data visualization **45%**
- #3 Advanced statistics, analytics, or mathematical modeling **42%**
- #4 Adaptability **41%**
- #5 Collaboration **39%**

Where are organizations looking to focus improvements in the workforce?³

- Expanding training on soft skills such as creativity and problem solving **46%**
- Investing more heavily in employee recruitment and retention **43%**
- Working with private and public sector partners to expand available training and credential programs **43%**
- Expanding training on technical skills **42%**
- Working with higher education institutions to better prepare future GEOINT professionals **38%**
- Increasing discussions of emerging technology and expected impacts **37%**
- Diversifying hiring pool in terms of backgrounds and experiences **36%**
- Partnering with outside GEOINT professionals and data scientists to expand skill sets **36%**

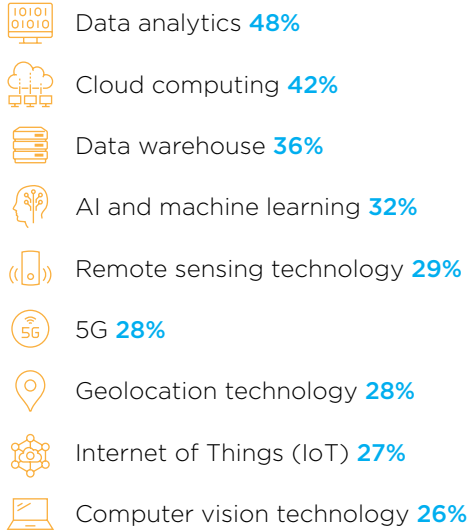
³ Respondents asked to select all that apply



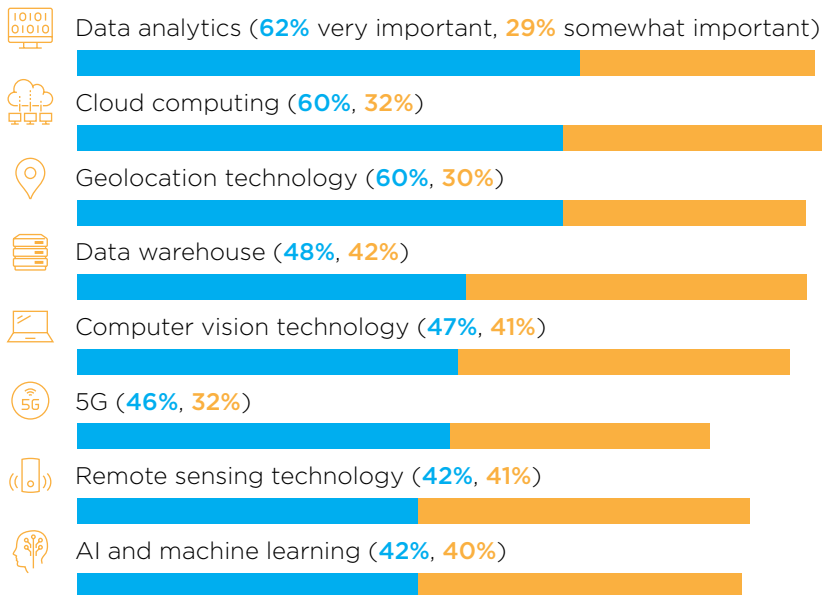
Tech Outlook Centers on Data and Cloud

Today, 82% of GEOINT stakeholders feel government organizations are **underutilizing** GEOINT technology (**27% agree strongly, 55% somewhat**). To improve, stakeholders recommend investments in data analytics and cloud computing.

Where does your organization plan to invest in the next two years?³



How important will the following technologies be over the next 10 years of GEOINT development?



³ Respondents asked to select all that apply





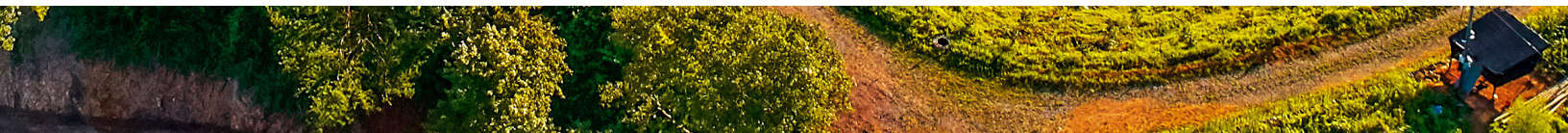
Strategize for Success

GEOINT stakeholders actively planning for AI integration feel **more confident** in their organization's digital futures.

Those with a formal strategy for adapting the workforce to AI are significantly more likely than their peers to:

Consider themselves ahead of the curve when it comes to technological advances in GEOINT	47% to 6%
Rate their average progress on NGA's 2025 five strategic initiatives as an "A"	51% to 15%
Say they've increased workforce training	63% to 34%
Say they've improved their ability to leverage industry-leading technology	58% to 32%
Feel very optimistic about the future of GEOINT	61% to 26%

**Percentages in blue represent organizations with a formal strategy; percentages in orange represent organizations without a formal strategy*



Maximizing GEOINT's Impact

Going forward, GEOINT leaders must prioritize an **adaptive mindset** and continually seek opportunities to apply GEOINT skills and technologies where they'll have the biggest impacts.

Over the next 10 years, where will GEOINT make the biggest impact for the United States?³

- **#1** Emergency response/natural disaster aid **47%**
- **#2** Health geography **40%**
- **#3** Climate change **39%**
- **#4** Urban planning and development **39%**
- **#5** Global competitiveness **37%**
- **#6** National defense **35%**

What will it take to be a future GEOINT leader?⁵

“Technological adaptations and training”

“Life-long learning; the ability to balance art – what humans can uniquely see, think, and do, with science – what digital technology, software, and bandwidth can do better than humans. The ability to grasp the operational and social implications of new technologies”

“[The ability to] be adaptive and acknowledge the interdisciplinary approach one should take in managing GEOINT”

“Be open to the ideas coming from the workforce who may have more experience in the latest technology”

“It's a matter of continually seeking innovation. You can't be complacent. Adversaries are constantly seeking new ways to do things, so we have to be faster”

“The main thing is to let the data lead us to where technology needs to go next”

³ Respondents asked to select all that apply

⁵ Open-ended response question

Methodology and Demographics

MeriTalk, in collaboration with USGIF, surveyed 100 GEOINT stakeholders from government and higher education in February 2023. The resulting research has a margin of error of $\pm 9.83\%$ at a 95% confidence level.

Organization type:

- **24%** Federal Government: Civilian Agency
- **13%** Federal Government: Defense or Intelligence Agency
- **33%** State or Local Government
- **30%** Higher Education

Respondent job titles:

- **37%** Geographic information systems (GIS) and analysis
- **14%** Geospatial data management
- **14%** Manage, educate, or otherwise support GEOINT professionals
- **13%** Human geography
- **8%** Applied science
- **4%** GEOINT collection
- **3%** Remote sensing and imagery analysis
- **3%** Imagery analysis or science
- **2%** Cartography
- **2%** Maritime analysis

Job title:

- **5%** C-suite/Executive level IT decision-maker
- **25%** GIS or IT Manager
- **16%** Mission, Business, or Program Manager
- **12%** GIS Analyst
- **3%** Geospatial or Imagery Analyst
- **9%** Data or Computer Scientist
- **1%** Photogrammetrist
- **4%** Geographer, Geodesist, or Mapping Scientist
- **6%** GEOINT Faculty
- **6%** GEOINT Researcher
- **13%** Other GEOINT professional or educator

100% of respondents are GEOINT stakeholders — those who work with, use, support, or educate professionals on remote sensing, geospatial information, or data information and intelligence.





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