

## **Geoint: Accelerating Decision Advantage**

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Location has always been one of the basic elements of understanding natural and man-made activities. From ancient times to the present, the ability to map activities to specific locations has been an important way for humans to create, develop, explore and explain the world. Historians actually view mapping as one of the most important developments in the history of the human race, as it allowed people to pass information from generation to generation and thereby sustain culture and economic development.

As the nation's top experts in remote sensing, geographic information systems, navigation, intelligence and other key disciplines gather in San Antonio Oct. 19, it is time once again to take stock of where we are in the evolution of America's newest major intelligence discipline, geospatial intelligence (geoint). With substantial focus and investment, geoint may be the most important foundational development in American intelligence and national security in more than 50 years.

Why is this capability so important? Today, intelligence is much more complex — both technically and organizationally — than ever before. Creating actionable intelligence requires much more precision, whether in searching for weapons of mass destruction, supporting our troops and allies in complex urban environments, or being able to quickly find and provide assistance and safety to people in need, such as after a natural disaster or a terrorist attack. Geospatial intelligence marries the curiosity of the analyst with the precision of the cartographer, with an understanding that location may be the central element to understanding the threats that we face, whether global or tactical.

Why is it more urgent than ever before? In an age that strategists characterize with words like surprise, asymmetry, failed states and chaos, our more transparent world places a premium on understanding and acting faster than our enemies, and before external reaction changes the calculus for action.

But geoint is also more urgent because of the way in which diverse inputs can be integrated quickly in the face of fast-moving threats and the need to understand complex situations. The National Geospatial-Intelligence Agency (NGA) gets credit for providing the organizational and intellectual foundations for geoint, yet must integrate seamlessly with CIA, the National Security Agency, the National Reconnaissance Office (NRO) and U.S. and allied civil and military partners in order to develop the best information that American intelligence can provide. Being able to quickly identify, find and locate someone or something of security import — a cell phone trigger for an improvised explosive device, individuals lost or hidden away in urban environments, or illicit packages specially tagged for further investigation — requires a rapid reduction of uncertainty and the precision required for action. When done well it represents a truly integrated U.S. intelligence capability and a sound source of U.S. decision advantage.

However, as we celebrate the increasing sophistication and importance of geoint, we should critically assess the foundational elements upon which it rests, whether intellectual or organizational in nature. Our failure to understand these trends and their implications could easily jeopardize the gains that the nation has made in geoint thus far. We see at least four issues of concern here:

- The state of U.S. space organization. Whatever its Cold War rationale, America's space bureaucracy remains highly inefficient in the face of shifting missions and the need for innovation to meet them: we seem schizophrenic, for example, on whether the NRO should be a high-risk organization or whether it should emphasize day-to-day reliability in critical missions; NOAA, on the other hand, has limited resources for research and development in mission areas, such as those related to the environment, that seem to be changing at a rate faster than our best analytic understanding. While the ongoing White House review should address some of these issues, perhaps a tighter budget environment will lead to greater collaboration across U.S. civil and national security sectors. Ten years of intense national studies about what to do with space will help, but studies do not equate to action.
- The importance of dynamic partnerships designed to address the diverse set of geospatial opportunities and challenges, whether from space or on the ground. The dynamic nature of government and commercial activities in Earth observation — whether for environmental, safety, security or scientific reasons — will increasingly demand specialized partnerships between governments, between government and industry, and among domestic and international industry partners. Governments will need to anticipate these partnerships in order to optimize the policy and regulatory environments within which they can thrive, and be sensitive to aspects of international conflict and cooperation. For industry, multisensor approaches, creative market strategies and integrated solutions will be the key to successful growth.
- Carefully consideration of how the models for commercial participation are changing structurally and diversifying internationally. Sadly, over three decades of bold U.S. policy in remote sensing commercialization has only gotten us marginally closer to the initial vision of government benefit and commercial value. At the same time, U.S. implementation seems to be driving the creation of surrogate intelligence systems instead of sensor diversity and a better understanding of the commercial market. In the area of navigation, even the historic government-industry stewardship model, which fostered growth in trusted and reliable applications, is under pressure from unique foreign innovation strategies and shifting U.S. governance. We need to pay careful attention to the reality that ownership of “spatial knowledge” will not be assured automatically to U.S. firms participating in this global market.
- The rise in the importance of analysis. American culture thrives on collecting specific data — “the secret” — as the source of our advantage in safety and security. There will always be value in that, especially for hard problems. However, for both us and our adversaries, the widespread proliferation of complements and substitutes — and the ability to quickly merge and process them — creates a situation where having the data may not be the source of decision advantage. There will be an increasing need to quickly drive analytic discoveries from within diverse combinations of data, including analysis that drives policy discussion and debate. Rather than collection itself, change detection and interpretation will become the norm.

Sustaining and enhancing the advantages we create every day with geoint will require us to be flexible in the face of these realities. We have learned the hard way to anticipate, rather than react to developments in this area: NGA's planned pursuit of foreign commercial radar

data, for example, reflects both the longer-term tragedy of poor U.S. policy thought and implementation as well as an excellent example of how we can and are adapting in the face of new conditions. Innovation must remain a key ingredient, although it is important to remember that technical organizations buried under a mountain of complex requirements rarely do so.

Looking forward, and armed with the complementary tools of the information age, we should be on the edge of continuing innovation in the technologies and human capital associated with remote sensing, locational data, geographic systems and others — and therefore geoint. But this world is changing dynamically: only careful attention, forward-looking U.S. government strategy, and taking advantage of commercially diverse opportunities will allow us to accelerate its contribution to U.S. decision advantage.