



Statement for the Record
before the
House Armed Services Committee
Subcommittee on Strategic Forces
on the
Fiscal Year 2017 Budget Request for National Security Space Programs
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Introduction

Chairman Rogers, Ranking Member Cooper and distinguished members of the Committee, I am pleased to testify before you today.

As the nation's primary provider of Geospatial-Intelligence (GEOINT) for the Department of Defense (DOD) and the Intelligence Community (IC), the National Geospatial-Intelligence Agency (NGA) is a regular user and consumer of space-borne sensors and services that enable us to perform missions and activities that include foreign intelligence, mapping, targeting, and safety of navigation.

As such, I appreciate the opportunity to appear alongside my colleagues to discuss the importance of supporting the President's FY2017 budget request for defense space programs. The proposed budget contains the resources we need to upgrade and integrate the nation's security space program to be relevant and ready to counter and survive current and future threats. It also includes funds that will allow us to expand GEOINT access to a broader range of users and to integrate and expose as much GEOINT content as feasible through secure, cloud-based information systems. Furthermore, the budget request will give NGA the ability to take greater advantage of commercial sources to increase persistence and to leverage information from the open, unclassified realm in tandem with the exquisite capabilities of classified government platforms and systems.

Such investments are critical in an era in which our nation faces more diverse crises than any other time during the past half century. ISIS attacks in Iraq and Syria, refugee migration, continued threats of aggression from Russia and North Korea, China's moves in the Spratly Islands, cyber-attacks from faceless antagonists, and international criminal networks are just a few examples of the many challenges to our national security.

GEOINT provides key insight and warning to our policy makers and warfighters, who need such information to effectively deal with problems such as these. Likewise, GEOINT provides our military the navigation, targeting, mapping, and imagery data they need to operate and succeed in this era of complex global and diverse threats.

Government and Commercial Space-Based Assets

To meet their needs, NGA and the National System for GEOINT depend heavily upon government and commercial space-based assets. Many of the government platforms that we rely upon are provided by the National Reconnaissance Office (NRO). These systems are critical to meeting many of our national security requirements, and the importance of their unique and extraordinary capabilities cannot be overstated.

Likewise, commercial space-based imagery platforms continue to increase their value, particularly to provide unclassified GEOINT products for U.S. government, military, state, local, and public use. Commercial imagery enables high-quality shareable GEOINT products current enough to provide a common operating picture when our forces are working with multinational coalitions. Furthermore, approximately 90 percent of the imagery needed for NGA's foundational GEOINT – the information behind our mapping, navigational and aeronautical charts, geodesy and other scientific earth science applications – is derived from commercial imagery sources.

These same commercial space assets enabled NGA to provide crisis support to federal, state, and local first responders during several recent natural and man-made disasters. During the 2015 Alaska wildfires, NGA partnered with the National Interagency Fire Center to provide geospatial and imagery analysis on more than 60 high-priority wildfire sites to support disaster relief and rescue efforts. NGA also supported the Federal Emergency Management Agency in fiscal year 2015 with flooding and damage assessments in South Carolina and Georgia.

By leveraging the unique capabilities of both commercial space-based imagery platforms and National Technical Means systems, NGA is able to balance our collection efforts to meet critical intelligence and military requirements in the most effective and efficient manner. Even as the commercial satellite industry expands, it is increasingly clear that future commercial capabilities will only complement, and never replace our exquisite national capabilities. No matter how much commercial imagery improves in quality and quantity, I cannot envision a time when NRO's expert capabilities and high performing assets will not be an important source.

Considering the importance of space-based assets to our GEOINT efforts, I

would like to highlight the Director of National Intelligence's 2016 Worldwide Threat Assessment, which notes that "threats to our use of military, civil, and commercial space systems will increase in the next few years as Russia and China progress in developing counterspace weapons to deny, degrade, or disrupt U.S. space systems." As foreign governments develop and deploy counterspace weapon systems capable of jamming, damaging, or destroying our space systems, we must remain committed to developing an adaptable and resilient space and ground architecture that can survive threats from our adversaries.

Global Positioning System

In addition to imagery platforms, NGA provides critical technical support to another space-based asset of note – the NAVSTAR Global Positioning System (GPS). GPS is a widely used aid for navigation, land surveying, map making, targeting, and various scientific uses. It provides a reliable 3-dimensional (3D) positioning capability as well as precise timing information used in many applications, including synchronization for cellular networks and wireless carriers in a multitude of countries. GPS and the rest of our space assets provide our military the "ultimate high ground" with an upper hand over the rest of the world.

NGA is also partnered with DOD to develop and maintain the World Geodetic System 1984 (WGS 84) as the standard geodetic frame of reference. WGS 84 provides a single, common, accessible 3D coordinate system and datum to reference and exchange GEOINT and data collected from a broad spectrum of sources used in geodesy, targeting, navigation, aviation, and geography. In recent years, we have increased the accuracy of WGS 84 from distances measured in meters down to centimeters, enabling a 30 percent increase in accuracy of DOD inertial navigation systems, such as those used on strategic bombers.

Expanding GEOINT Access

The President's budget request for FY2017 includes funds that support current and future space-borne assets used by NGA. It also includes resources to enable NGA to expand access to GEOINT on both classified and unclassified systems, and to take important new steps that will better integrate non-traditional sources and services into

our GEOINT efforts.

For instance, NGA is leading the IC's move to a cloud-based environment that allows users to access timely GEOINT from a common desktop environment, regardless of their physical location or agency affiliation. In early FY2016, we met our initial goal to deploy the IC Desktop Environment (IC DTE) to all NGA and Defense Intelligence Agency employees, totaling approximately 50,000 users. Currently, we are upgrading security features with a Phase 2 version of IC DTE and will migrate approximately 75,000 more users by the end of FY2017. Our goal is to have the entire IC population using a common set of office automation, communication, and collaboration tools to increase information sharing, collaboration, and interoperability by the end of FY2020. In addition, last fall, NGA released adaptive versions of The Globe, the website access point to our data, ensuring users can effectively access our information regardless of their computing systems, bandwidth, or classification level.

Commercial GEOINT Capabilities

NGA is taking steps to harness the unprecedented bow wave of GEOINT offerings from established and emerging commercial providers. The small satellite revolution is both intriguing and inspiring, and we are approaching this as an opportunity to expand global coverage. As NGA takes advantage of expanding commercial capabilities and integrates them into the broader GEOINT enterprise, the warfighters' abilities to directly access GEOINT products and services will also increase. We will provide them more access to harder targets and areas, and enable them to operate with greater awareness in rapidly-changing environments.

As commercial offerings continue to evolve from providing primarily imagery pixels to offering imagery-based analytics and services, NGA will seek the optimum mix of commercial sensors, analytic capabilities, services, and delivery methods to maximize success for our customers. Furthermore, our tradecraft will continue to evolve from traditional reconnaissance imagery analysis to the application of geospatial analysis of data and increasingly diverse commercial and national data sources. This will ensure that NGA continues to meet the GEOINT needs of our intelligence, tactical, and foundational GEOINT customers, even as their needs grow and their decision

timelines shrink.

To carry out this shift, we at NGA must understand the implications of the evolution of the commercial GEOINT industry as it occurs. So, we are engaging with emerging commercial GEOINT providers to learn how the industry is maturing, what products and capabilities they are building, and what information they need from us as they develop their satellite constellations and analytic algorithms. NGA is also – in collaboration with our user base and mission partners – experimenting and evaluating ever-evolving commercial GEOINT data and products, analytic services, and knowledge-building methodologies. Ultimately, NGA will acquire commercial GEOINT services that are sufficiently mature and adopt them into our operations.

Likewise, NGA is increasingly operating with and, when necessary, in the open. In September 2015, we launched an unclassified public website to coincide with the President's address at the Conference on Global Leadership in the Arctic: Cooperation, Innovation, Engagement and Resilience (GLACIER). The website (<http://nga.maps.arcgis.com>) informs and educates audiences by providing significant unclassified Arctic and other geospatial intelligence to the public.

Such efforts demonstrate the power of integrating traditional sources with non-traditional unclassified information. NGA recently completed the first "GEOINT Pathfinder" experiment, which sought answers on several intelligence questions using only unclassified sources such as commercial and civil imagery, open subscriptions, volunteered geographic information, and social media. The team discovered amended maps of the South China Sea that included plans for runways on reefs seven months before construction occurred – information critical to safety of navigation and our armed forces. Needless to say, the potential of using unclassified sources to provide key information like this to the DOD is significant, which is why we will kick off GEOINT Pathfinder 2 later this year.

Conclusion

In closing, the President's FY2017 budget request provides us with the resources necessary to maintain access to a variety of space systems and space-borne products critical to our ability to support warning, targeting, mission planning, mapping, and

safety of navigation. It also supports key investments in technology, workforce talent, and analytic techniques that will produce timely, accurate, and relevant GEOINT for the national security community, international partners, first responders, the warfighter, and the public.

On behalf of the women and men of NGA, thank you for your continued support. I would be happy to answer any questions you may have.