Statement for the Record

before the

House Armed Services Committee

Subcommittee on Strategic Forces

on the

Fiscal Year 2018 Priorities and Posture of the National Security Space Enterprise

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**Introduction**

Chairman Rogers, Ranking Member Cooper and distinguished members of the Committee, on behalf of the women and men of the National Geospatial-Intelligence Agency (NGA) and the National System for Geospatial-Intelligence (NSG), I am pleased to testify before you today.  NGA and our geospatial-intelligence (GEOINT) partners help decision makers, military commanders, and first responders understand what's happening at any given place and time, and anticipate what may happen next.  I believe our motto says it all, "Know the earth, show the way, and understand the world." Individually and collectively, I can attest that we are fully committed to our Intelligence Community (IC) and Department of Defense (DOD) responsibilities and broader obligation to the nation's security.

NGA and our GEOINT partners across the national security community are critical to the IC's commitment to minimize surprise and enable decision advantage. We are routinely able to respond more dynamically than other traditional intelligence disciplines, as we have worldwide reach, increasingly persistent collection and systematic analytic access.  With the explosion in publicly available information and non-traditional sources, the IC no longer has a monopoly on access or insight, but the IC is routinely asked to corroborate what is being reported and to put it into context of what we know about the evolving issue, to include the motives of the participants and the potential threats to our interests.  Another of the ways GEOINT is able to contribute to favorable outcomes is by providing a less sensitive source from which to expose our knowledge and perspective on a situation or threat.  Put another way, our customers look to NGA and our profession to create coherence out of chaos.

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NGA and our NSG partners, including the combatant commands (CCMDs) and the service agencies, are integral players in operations to degrade and disrupt the ability of terrorist organizations.  Every day, our analysts support our government's antiterrorism activities around the world.

The contested regions of Iraq and Syria are host to a web of competing interests, conflicting parties, and complex alliances.  GEOINT contributes to our understanding of the actions which players undertake – such as advances of state-actors into neighboring states, the provision of lethal aid and assistance to favored factions, and the underlying terrain, human geography and physical and economic infrastructure.  By continuously monitoring these targets, we provide warning, detect and describe operations, and enable policymakers and operators to pursue responses which serve our interests and minimize our exposure to threats.  This includes monitoring Syria and ISIS's response to actions by traditional state actors, such as Russia, Iran, and Turkey, as well as non-state actors, such as Hezbollah, Shiite militias, and Kurdish militias.


**Strengthening GEOINT Space Enterprise**

In addition to serving as the Director of NGA, I serve as the Functional Manager of the NSG.  In order to ensure the DOD and IC are postured to address today's critical intelligence missions, I synchronize operations to realize a professional, interoperable, agile, and integrated GEONT enterprise.  Functional Management initiatives include: *Analytic Modernization* to establish a common framework to harness technology, data, analytic strategies and tradecraft to provide on-demand information; *Cloud Migration* to enable our GEOINT enterprise to consolidate and share critical resources and data to

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facilitate user access and meet mission needs; *Commercial GEOINT* to embrace new and diverse sources of information, techniques, and tools; *Enterprise Capabilities* to formulate GEOINT needs derived from inputs across the enterprise; *Mission Governance* to synchronize GEOINT operations to meet priority requirements; *Safety of Navigation* to meet the growing demand for this core mission by leveraging the full array of current and emerging capabilities; *Standards* to discover and share GEOINT content from all sources; and *Certification* to create a trusted workplace of GEOINT professionals with universally recognized skills.

In my role as Functional Manager, I also ensure CCMD needs are met through future overhead architecture.  More specifically, the GEOINT Enterprise Capability Document (ECD) serves as a framework for translating Critical Intelligence Needs into the key enterprise functions and capabilities our analysts require to solve our most vexing challenges.  By leveraging existing national, military and commercial GEOINT sources and guiding the development of future capabilities, the ECD ultimately advances GEOINT collection, characterization, automation, and anticipatory analysis. The ECD advances my effort to lead enterprise-level priorities, orchestrate the capabilities necessary to create, acquire and broker GEOINT content and differentiate GEOINT as an activity-based, anticipatory and predictive intelligence discipline.

**Global Persistent GEOINT**

Global Persistent GEOINT enables NGA to provide national and tactical leaders the intelligence and early warning needed for decision advantage.  It also supports the CCMDs in holding key strategic targets in their assigned Areas of Responsibility at risk.

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It leverages the exquisite capabilities of the National Reconnaissance Office (NRO) through dynamic, model-driven collection that accelerates data to answers, increases NGA's investments in the commercial sector, and integrates the capabilities of international partners to fill intelligence gaps and provide early warning needed for decision advantage.

**Automating the GEOINT Enterprise for Advanced Analytics**

The explosion of available data is causing the GEOINT discipline to grow beyond the limits of human interpretation and explanation, which diminishes the comparative advantage current collection provides. By embracing the use of algorithms, automated processing, machine-to-machine learning and artificial intelligence, NGA will advance GEOINT tradecraft with human-machine collaboration, near real-time analysis and the ability to anticipate behaviors to provide us a new advantage.

By combining all of the data now available to us with these new technological advancements, we have the opportunity to serve the nation better than ever before. We believe that technology will allow us to automate as much as 75% or more of the rote activities that our personnel perform manually today, freeing them to spend more time focused on hard intelligence questions. Getting to that point will require significant investments in our IT architecture, as well as in our Research and Development, allowing our best and brightest to apply their brainpower to analyzing volumes of data that would be too large for them to deal with on their own.

**Commercial GEOINT Activity**

Conservative estimates over the next ten years predict that some 9000

commercial satellites, large and small, will be launched, compared to fewer than 1500 in

the last ten years.  The crowded global space arena, supported by increased

technology, commercial investment, and reduced launch costs, continues to develop

new space-enabled capabilities and space situational awareness across the

international community space-based services to include imagery, weather,

communications, missile warning, targeting, and positioning, navigation, and timing.

In response to the wave of emerging commercial imagery providers, NGA began

engaging with the most mature of these "new space" providers to assess mission utility

and possible access to operational data and services.  We quickly realized that working

jointly on this with our NRO mission partner affords both agencies the best opportunity

to take full advantage of new and emerging commercial GEOINT capabilities to satisfy

mission needs.  Together, we stood up the joint Commercial GEOINT Activity (CGA),

whereby NGA and NRO are working more closely than ever before to identify and

evaluate emerging commercial GEOINT data and services against customer

requirements.  CGA serves as the focal point for engagement with our industry partners

to understand and assess emerging commercial capabilities for technical feasibility and

mission utility.  Based on these assessments, CGA will recommend strategic

investments that will deliver a more diverse, efficient and cost effective mix of

commercial and national overhead architecture, imagery, and services; thereby

breeding success in new and open capabilities.

Succeeding in and with the open also means looking not just at new sources, but

also at new forms of data.  Most recently, NGA has been using publicly available

information such as social media data, together with geospatial information to anticipate hostile actions to US or Allied interests, and provide a fully integrated intelligence picture.  Unclassified, open, and nontraditional data are overtaking traditional classified data in volume and velocity.

In short, we must go wherever the data exist, and apply data wherever the mission demands.  While NGA has made great strides in successfully leveraging commercial imagery and other open sources to achieve our mission, NGA's architecture, tradecraft and training, standards, governance, and culture remain optimized for classified GEOINT content.  To truly succeed in the open, NGA must lead the IC in overcoming our historic reluctance to allow analysts to engage externally and embrace the ever-expanding private marketplace.  Open content will be embraced with the same fervor as classified content, and in many cases, we will use open content first and augment with classified sources to reject, confirm, or increase confidence in analytic judgments.

**NSG Open Mapping Enclave (NOME)**

NOME is an online toolkit that allows the NSG to contribute and benefit from the power of open content, also known as Volunteered Geographic Information (VGI).  As a crowdsourcing method to harnesses tools to create, assemble, and disseminate geographical data provided voluntarily by individuals, crowdsourcing products such as Wikipedia and OpenStreetMap are collecting useful geospatial information for our analysts to produce GEOINT products.

By allowing potentially thousands of users to contribute their expert knowledge to

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maps, VGI opens up geospatial data to communities that in the past would have had to rely on their own limited collection resources and proprietary technologies. NOME is challenging conventional geospatial collection and dissemination methods to reduce costs, improve accuracy, and enhance mission planning and execution.

**Conclusion**

In closing, with your continued support, NGA will strengthen our Functional Management responsibilities, pursue Global Persistent GEOINT, automate the GEOINT enterprise in order to support advanced analytics, and sustain our commercial GEOINT activity.

On behalf of the women and men of NGA and the GEOINT community, thank you for your continued support. I'm pleased to answer any questions that you may have.