

**Statement for the Record**

**Submitted by**

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Information, Policy, and the Census**

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## **I. Introduction.**

Chairman Putnam, Ranking Member Clay, and distinguished Members of the Subcommittee, thank you for your continued interest in and support of geospatial information. On behalf of National Geospatial-Intelligence Agency (NGA) Director James R. Clapper, Lieutenant General, USAF (Ret.), and Deputy Director Joanne Isham, we appreciate this opportunity to share with you our efforts to streamline collection and storage of geospatial information, implement geospatial standards, and reduce redundancy in government through our role in the e-Government (e-gov) Initiative, Geospatial One-Stop (GOS), and standards development.

We live in a country that is rich in geospatial data -- from the nightly news displaying situational awareness in Iraq and Afghanistan, to automobiles and cell phones equipped with Global Positioning System (GPS) receivers, to commercial imaging satellites orbiting overhead. The abundance of geospatial data affords us great opportunities but also creates significant challenges. In the post-9/11 world, government entities -- Defense, Civil, State, and local -- must improve our ability to work collaboratively, readily sharing appropriate information in support of our Nation's needs. As a result, government and industry must work to forge new partnerships and build stronger relationships to overcome the significant challenges of this Herculean task. In the public sector alone, there are billions of individual bits of geospatial data independently collected to meet diverse requirements that are often difficult to discover or to utilize outside of the "owning" organization. The e-gov GOS and related standardization initiatives are making significant progress in reducing redundancies and costs, while improving information sharing by:

- 1) Building information technology architectures that facilitate efficient population, discovery, and retrieval of a wide variety of data; and
- 2) Standardizing the content of foundational Geospatial data themes.

Through the implementation of the e-gov GOS program our country is taking vital steps to ensure our first responders, warfighters, intelligence officials, and policy makers readily receive the most accurate and timely information available without duplication of effort. Data content standardization is one of the keys to successfully and efficiently providing this information to the wide variety of consumers both inside and outside of the federal government. When customers receive data in non-compatible forms, its utility is greatly reduced. NGA is leading the way for DoD's standardization efforts and supports this process across the all levels of government (Federal, State, and local), industry and academia.

The ability to access geospatial data in a timely fashion is just as important as data content standardization. The Geospatial One-Stop initiative is building a web-based portal using open, commercial interface standards to allow for interoperability among users and efficient discovery of and access to these data regardless of the specific customer, thereby eliminating the need for numerous agencies to hold the same information in their systems. The federal government is a vast storehouse of publicly available geospatial data. Once efficiently cataloged and standardized, GOS will grant federated access by the public and private sectors. The long-term benefits of streamlining geospatial data collection and archiving, coupled with the implementation of geospatial data standards, will increase efficiency to save time, money, and human resources.

As both a member of the Intelligence Community and as a Department of Defense (DoD) combat support agency, NGA provides geospatial intelligence (GEOINT) – traditionally categorized as imagery, imagery intelligence, and geospatial information – to support protecting national security, combating the threat of terrorism, implementing national policy, responding to natural disasters, and securing the homeland. Each of these missions, unique in purpose, require timely, relevant, and accurate GEOINT, which must be shared with our customers and partners. Inside the Defense and Intelligence Communities, we face the same issues that this Subcommittee is addressing. We are committed to supporting the larger e-gov initiatives by aligning to common standards, exposing all releasable domestic geospatial information through the GOS portal, and utilizing – not duplicating – the information available from other government entities through the GOS.

This Statement for the Record will address NGA's role in the Geospatial One-Stop initiative, standards development, and the combined impact of these initiatives to increase efficiency while reducing the costs and redundancy of geospatial information in government.

## **II. E-Government Initiative: NGA's Role in Geospatial One-Stop**

Established as the US Government's official Information Technology (IT) transformation initiative, the e-gov projects consist of 25 individual web-based projects sponsored by the Office of Management and Budget (OMB). E-gov is designed to enhance government efficiency and to improve citizen services by making it easier, faster, and less expensive for all levels of government and the public to access data and conduct government IT business. NGA serves as the DoD lead for the GOS initiative. The goals of the GOS initiative are threefold: First, provide

Federal, State, local, and Tribal Governments with efficient access to a diverse collection of US domestic geospatial information and data holdings. Second, reduce the cost expenditures due to duplicative data purchases, lessen overhead costs associated with locating and integrating data across disparate geospatial stovepipes, and spread costs among agencies with common geospatial needs. Third, and perhaps most importantly, the GOS portal, [www.geodata.gov](http://www.geodata.gov), creates a "one stop shopping" environment and serves as a repository for access to all publicly available geospatial holdings and access to shared services.

The Department of the Interior (DOI) serves as the Managing Partner of the GOS initiative and is supported by federal agency partners, including the DoD. As the functional manager for geospatial intelligence information within the DoD and IC, NGA is positioned to utilize the GOS and maximize DoD and IC access to this information source as indicated by specific mission requirements. In August 2003, DoD/NGA and DOI entered into a Memorandum of Agreement (MOA) establishing NGA as the lead DoD agency for GOS activities. The MOA mandates that each service/agency within DoD will participate in GOS activities by contributing resources (geospatial data and metadata, current and planned) and will create an implementation strategy for compliance in accordance with the GOS guiding documents.

As the DoD GOS lead, NGA is charged with developing, maintaining, and sustaining the department's efforts by:

- Develop a portal and interface for NGA assets;
- Make available other DoD portals;
- Prescribe standards and monitor implementation; and
- Maintain a list of all current GOS appropriate data sets, information, and portals throughout DoD services/agencies.

In this capacity as functional manager, NGA works to ensure that all DoD agencies contribute to, and abide by, GOS established data content standards and comply with emerging versions of geospatial standards as they are vetted through national and international standards governing bodies. NGA is developing and maintaining a list of DoD-wide GOS geospatial data holdings in order to preserve adequate records of geospatial data submitted into the GOS by DoD services and agencies. This inventory facilitates resource sharing and promotes the elimination of redundant information populating the GOS.

As part of the GOS initiative process, NGA submits a monthly report to Office of the Secretary of Defense CIO charting progress and accounting for resources expended and projected. To execute these functions, NGA is authorized to allocate financial resources to support the GOS initiative. NGA, through an interagency agreement, directly invested into the GOS \$475k in Fiscal Year (FY) 2002; \$525k in FY 2003, and \$525k in FY 2004, and we expect to continue our support into the future. NGA designates how the direct funding is allocated to GOS tasks. The GOS Managing Partner is tasked with reporting to NGA on the actual spending. In addition to the funding contributed directly to GOS, NGA provides contractor personnel for the execution of GOS tasks both internal and external to NGA, bringing the total NGA annual support to \$1.4m. NGA government personnel provide support across GOS activities drawing from the full breadth of NGA resources.

NGA provides domestic, unclassified metadata (approved for release by NGA's Office of International Policy) into the GOS through the US Geological Survey, the DOI lead agency for the e-gov GOS initiative. The initial data sets NGA will provide to GOS include Digital Terrain Elevation Data (Level 0), Digital Orthoimagery (Imagery-10), Vector MAP (Levels 0/1), and

Shuttle Radar Topography Mission (SRTM). NGA's Homeland Security Division and Enterprise Operations Directorate have geospatial information and metadata, (e.g., portions of the 133 Urban Areas project that was jointly developed with USGS) that will be available through GOS. NGA submitted test metadata to GOS in Spring 2003.

As a member of the Intelligence Community, NGA is governed by statute and regulation, and thus, is limited in its authority to provide geospatial intelligence support to State, county, Tribal and other political subdivisions. NGA's mission is primarily focused on foreign intelligence; thus, NGA's data contributions to GOS are somewhat limited since the majority of our geospatial data holdings are of foreign territory and may also be restricted by terms of bilateral agreements. For our domestic data, NGA uses discretion to make data available to the public, subject to security concerns and proprietary licensing.

In order to interface with the GOS, NGA developed the NGA GOS (NGOS), a prototype web-based service funded by NGA that allows for the bi-directional direct transfer of geospatial metadata between NGA and GOS. The NGOS portal will allow NGA to populate and employ GOS geospatial metadata holdings supporting our homeland security mission. The NGOS portal is in the security and IT accreditation process; we anticipate that expect it will become operational in Fall 2004.

### **III. Establishing Geospatial Intelligence Standards**

Establishing geospatial data standards across the nation and, ultimately, internationally is paramount if we are to guarantee global geospatial information dominance. Standards make an enormous contribution to most aspects of our lives – although very often, that contribution is invisible. It is when there is an absence of standards that their importance is

recognized. One only needs to look to history to reinforce the need for standards across specialized disciplines. Take for example, the Great Baltimore Fire in 1904:

**The Great Baltimore Fire**

On the morning of February 7, 1904, fire spread quickly through the Hurst building in Baltimore, Maryland. An alarm sounded, activating all the fire companies in the Baltimore and Washington, DC areas. The DC fire departments discovered that their hoses did not fit the hydrants in Baltimore. Firefighters finally extinguished the fire by the following evening; the fire destroyed 140 acres, more than seventy blocks, and 1,526 buildings. This disaster, highlighting the need for interoperability, led to the formation of the American National Standards Institute, which published standards for pipes and threads about ten years later. Once again, tragedy led to technological innovation and standards implementation.

(Source: <http://www.federalhillonline.com/history.htm#6>)

Today's hyper-paced information society cannot wait 10 years for data standardization of the geospatial intelligence discipline. The United States no longer exclusively faces threats with known capabilities and forces. Our enemies are unpredictable, numerous, and with elusive bases of operations not necessarily sponsored by any nation, thereby making our mission more challenging both on the home front and overseas. Every day our nation's emergency responders, warfighters, intelligence officials, and policy makers rely on geospatial data to save lives and property.

NGA is the GEOINT functional manager. In this capacity, the NGA Director prescribes and mandates standards for imagery, imagery intelligence, and geospatial information for all DoD components and the IC, including, where appropriate, NGA's civil and coalition partners.

In September 2002, NGA Director Clapper authorized the establishment of the National Center for Geospatial Intelligence Standards (NCGIS), which became operational October 1, 2003.

The NCGIS is charged with advocating GEOINT standards by developing, implementing, and sustaining a comprehensive, enterprise-wide Geospatial Intelligence Standards Program for the National System for Geospatial-Intelligence (NSG) community. The primary role of the NCGIS is to ensure a coordinated standards-based approach to implementation of enterprise-wide architectures and to data sharing. This will allow us to achieve geospatial intelligence information interoperability within the context of transformational activities taking place within NGA and the NSG. In this capacity, the NCGIS selects the common geospatial intelligence standards that enable the NSG Community to:

- Share geospatial information across the defense, intelligence, and homeland security communities;
- Eliminate proprietary, costly, and fragile "stovepipe" interfaces;
- Quickly and effectively respond to the needs of the warfighter in all modes of operation, including low intensity conflicts and Military-Operations-Other-Than-War (MOOTW);
- Maximize the use of tested and formally approved standards-based commercial-off-the-shelf (SCOTS) components; and
- Efficiently meet system requirements and reduce risks associated with acquisitions.

In April 2004, the NGA Director Clapper issued the "NSG Statement of Strategic Intent." This document outlines NGA's priorities as the GEOINT functional manager for the NSG. The NCGIS Standards Roadmap, developed to guide the NCGIS in building a GEOINT Standards Program, incorporates each of these objectives. NGA recognizes that we must establish standards

through partnerships with industry and other government agencies. NGA leads the way in establishing stringent requirements for geospatial standards to ensure commercial geospatial products are reliable and interoperable. NGA's proposed standards support the use of SCOTS for common exploitation of geospatial data. In this process of standardizing data and implementing SCOTS, NGA must address the stores of legacy agency geospatial products that used out-dated DoD standards. In the interim, NGA will make legacy products available in their native formats and will transition them to the new standards over time.

NGA has a vested interest in the activities of the Federal Geospatial Data Committee (FGDC). As never before, it is imperative that the DoD, IC, and Federal civil communities work together to share information. Common geospatial standards are critical to enabling interoperability across these communities. The technical challenges of achieving interoperability also cannot be realized without the involvement and support from commercial industry. Consortia, such as the Open GIS Consortia (OGC), are critical to testing and promulgating open consensus based standards. One goal is to increase NGA's capabilities to leverage existing market driven SCOTS solutions for fulfilling analysts' needs in undertaking their missions.

NGA (through its predecessor organizations) has been an active member of the FGDC Standards Working Group since 1990 and has been instrumental in moving FGDC developed standards through the national and international standards arenas. The standards approved and established by the FGDC lay the foundation for GEOINT standards within the DoD and IC. NGA engages these communities through its GEOINT Standards Program. For example, NGA NCGIS participated in the development of Emergency Management Symbolology by the FGDC, Homeland Security Working

Group, Symbology Sub-Working Group. The working group developed a symbol set for first responders and emergency managers that included symbols for incidents, operations, infrastructure, and natural events, and modifiers to indicate the degree of damage. NCGIS expertise was especially useful for comparison of Emergency Management Symbology with existing DoD Common Warfighting Symbology. NCGIS also provided funding (along with the Federal Emergency Management Agency) for an OGC interoperability project for Emergency Mapping Symbology to advance development of four draft OGC standards relevant to portrayal of geographic information. Maturation of these OGC standards will contribute to a NCGIS objective of developing a schema for SCOTS symbol registry based on OGC and other international/industry standards.

#### **IV. Closing**

NGA is proud to serve as the DoD lead on the e-gov GOS initiative and geospatial standards development. NGA has engaged agencies across the federal government to increase the effectiveness and efficiency of geospatial data while simultaneously reducing redundant purchases of information.

Improving our Nation's ability to populate and access standardized geospatial intelligence on-demand is not merely a "good government" activity - it is critical for securing the homeland, winning the war on terrorism, and meeting the unknown challenges of the future. NGA is committed to working with all of our industry and government partners to improve our collective ability to share publicly available geospatial data, coordinate government-wide acquisition of geospatial data, and implement geospatial data standards across the discipline. As the DoD and IC Community functional manager for GEOINT, NGA will continue to meet challenges that strike at the very core of our

mission and is embodied in our mission statement: "Know the Earth...Show the Way."

Chairman Putnam, Ranking Member Clay and members of the Subcommittee, thank you for allowing me to testify today, and we look forward to working with you in the future on critical geospatial intelligence issues.