



NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY

Office of Corporate Communications

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**Remarks as prepared for
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Good morning. What a great day. I am honored to be with you.

Jack [Dangermond], thank you! You know you drive and inspire me. So I'm going to share a little inside baseball with everyone. About a year ago – I met Jack for the first time. In fact, it was right before this very conference – my first time attending any Esri event, and just about a month after I had become the Deputy Director, NGA. My shine hadn't even worn off!

And, in his iconic way of providing gracious wisdom with exquisite simplicity, he said "Sue, you are doing it wrong!" He went on, "NGA is missing opportunities because you are not positioned to take advantage of the capabilities that you have available to you."

Okay – he didn't really say that but that's what I heard. Since that fateful day, and with an energy and passion that derives from dedication to the Nation's goals, we have been working side by side with Esri to rectify the situation and to advance our GEOINT capabilities. Because for us, with the mission we have and the imperative we feel to succeed in the open—where the data, issues, technology, and people reside—there is no choice.

So, we are going to talk a lot more about how and what we've done to make Jack so proud (because, isn't that our collective quest, really?), but first, let me give you a couple examples of what we have been able to deliver.

Last year, Robert Cardillo – NGA's Director – told you about the work we did with the Ebola crisis, sharing our data openly, on the world-wide-web, vice on a controlled system, to provide discoverable GEOINT to assist U.S. efforts to bring an end to the outbreak. On the heels of that crisis, and with even faster, better response, we leapt into the fray of recovery from the Nepal Earthquake.

Today, I want to tell you another success story. In partnership with Esri, we're in the middle of releasing a variety of non-classified data, working with a great partner, the University of Minnesota's Polar Geospatial Center to develop digital elevation models of Alaska, and eventually all of the Arctic.

This is the first time that we're making detailed, digital models available to the public. Models that show you shoreline elevation, and how much the water levels can rise before there's flooding. Models that can also tell you how ice and snow melts drain, how water feeds through the valleys, and how people in the Arctic get their drinking water. These models can support anything dependent on elevation. You

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can think of the possibilities as well as I—scientific research, commercial endeavors, economic impact, military operations, and on and on.

I will spend some time talking about partnerships – not only with Esri, but with others. I'll go into how we're leveraging those partnerships today, and how we plan on leveraging them into the immediate future. A central component of this vision requires a geospatial platform in a shared environment. And, the Intelligence Community's new enterprise-wide delivery platform—what we call GEOINT Services—enables that vision and will be online this year across multiple security domains. We will talk more about this in a minute or two, but first, let me start where I always start—with mission and need.

I don't have to tell you about the threats and challenges that the Nation—and, by extension, NGA--still have in front of us. You know them: cyber as a global attack platform; radical terrorist groups with the ability to project effects globally; regional conflicts with world-wide implications, such as the ongoing conflict in Syria; China's continued efforts to expand their ability to project military power; the re-emergence of a Soviet-style Russia; Global urbanization, with more than 54% of the world's population living in cities; and climate change—stressing our natural resources, such as fresh water availability. And as easy as it is to say them, understanding them—much less countering them—is, as my dad would say “a fascinating challenge cleverly disguised as an insurmountable obstacle.”

I know that this is not a national security conference, but I suspect that you all share NGA's commitment to stay well ahead of our adversaries. It will take all of us in this room, and in our disciplines, to address these fast-moving issues. It will require new ways of doing business. Simply put: what got us here, won't get us where we need to be. So let's talk about the steps we've taken to pull our partners more fully and completely into Team GEOINT.

First of all, we're incrementally shifting from building and using agency-specific IT systems, tools and capabilities, to sharing cloud-based services. The Intelligence Community's Information Technology Environment, or IC ITE, is the IC-wide strategy to accomplish this--enabling agencies to share information and capabilities on demand to meet mission needs. And, NGA will be off our own infrastructure and into the Community Cloud in two years—something that sounds yawn inducing, but is actually a move that will enable everything we want to do. The result will be a more efficient model for resource sharing that can scale rapidly to meet unexpected and emergent requirements – perfect for the dynamic world I just described.

As I mentioned, GEOINT Services is the name of the intelligence community's solution for how we share geospatial knowledge. The concept is this simple: we will expose our content—and your content if you allow—in a way that is useful. Period.

We will provide cloud-based scalable, responsive, Open Geospatial Consortium compliant services for common use on Top Secret, Secret, and Unclassified domains. And, we will demand that every piece of intelligence is tied to a place and a time—even if it is not traditional geospatial data. This will be true whether it is data from commercial sources, open sources, or governmental sources.



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The biggest impact GEOINT Services will have for our users is that it will speed up the discovery, access to, processing and visualization of geospatial content to support time-critical tactical requirements. You will be able to spend less time hunting and gathering, and more time correlating and analyzing. And you will be able to more easily communicate using simple GIS tools such as Story Maps. In sum, we are making changes to how we develop, acquire and deploy tools that will allow NGA to get solutions to our workforce and our mission partners much faster and more effectively.

Our Fiscal Year 2016 plan included building geospatial content management tools into our unclassified and ICITE service offerings. This assists our mission partners as they migrate and manage their own geospatial data in the Cloud. And it provides reliability and consistency throughout the Intelligence Community. In addition to the platform, we'll provide central registry and cataloging services that will help users find and get data. As we grow the quality and quantity of services, users throughout the Department of Defense and the Intelligence Community can better support the kind of analysis that will dominate our future.

Let me make this real. One of the NGA's initiatives is Structured Observation Management, or, harvesting the information contained in images, in an organized manner, for myriad uses. Every feature, from every image, available independent of the frame. Think of the possibilities. But none of these possibilities become real if there are not services to support finding, getting, sharing, and using these data.

I've talked a lot about how GEOINT Services will enable the mission, and the common services we're providing. We're also doing a lot behind the scenes. Just to give you one example, we're changing the way we develop and acquire tools and capabilities needed by warfighters, first responders, and our other mission users. NGA is switching to a Dev/Ops methodology that allows developers and solution providers to get needed capabilities deployed to mission users much more rapidly. With this methodology, we're embracing collaboration during the solution development process, and we're establishing a developer environment that supports automated delivery of software and code into the NGA cloud. Traditionally, it takes the government years—seriously, YEARS—to request, build and roll out a new IT system or tool. We're reducing that timeline significantly, so that we can push out capabilities to users in weeks, days, or even hours. This includes using open source tools such as RedMine, GitLab, Jenkins, and Nexus within our continuous delivery/continuous integration pipeline. We'll be employing this process on all networks, beginning our development in the Unclassified Domain, adopting a policy of “build low, push high.”

We have capabilities already available for geospatial analysts to leverage, including our base visualization and data services, where analysts can discover trusted GEOINT. (Trust us, we're from the Government!) For example, NGA's Map of the World initiative has delivered our foundation GEOINT layers as services to support easy access and visualization on five secure domains. This enables NGA users as diverse as Army infantrymen and international partners to access our content on the networks where they work.

We also use Esri's ArcGIS Portal as the IC GIS Portal, providing a platform for analytic collaboration and data sharing for IC geospatial users. Our adoption of portal and web GIS promotes the sharing of

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geospatial data sets, tools and services in one location—about time, you say! As of yesterday, we have had more than 19,000 unique users log into IC GIS Portal, which is more than double the number of users we had just last October. These users include the traditional IC agencies, but also our partners in the Army, Navy, Marines, Air Force, and Combatant Commands. And, nearly 50% of these users have been active in Portal in the last 30 days.

Not only do these advantages allow users around the world to collaborate in support of a variety of missions. But all of you can relate to misplacing the “S.H.X” and the “P.R.J.” files when sharing data with your colleagues or even moving them in your own computer. By using the Portal, our users don’t have to worry and instead get to elevate their focus to the tasks at hand.

On Monday, Esri and USGIF hosted an App Challenge with NGA’s GEOINT Services. Seven apps were developed by six teams in a short eight-hour workday, with teams from NGA, EUCOM, DTRA, Naval Surface Warfare Office, and the Naval Oceanographic Office participating. And, they were all analysts. Not developers.

One of the apps, developed by NGA analysts, is a business intelligence application for maritime chart production and updates. Using the tools within IC GIS Portal, the team built a dashboard that integrated business analytics, mapping, and near real-time updates. Our agency leadership is already looking at how to use this capability to support decision-making on resource prioritization. Another app allows users to perform anticipatory analysis of violence and unrest by analyzing historical data and sharing this as an interactive product using a Portal Web App. But, we are not just about awesome apps.

We are also providing a modern, user-friendly, streamlined web presence on all domains, including the worldwide web. You won’t have to piece together the story. You’ll have it all in one place. But enough talk about what we’ve done, and what we plan to do. It’s time to demonstrate.

We’re going to show you an example of how some of the initiatives and tools we’ve discussed can be applied to one upcoming mission: Security at the 2016 Rio Olympics. It’s a lot of work to prepare for any Olympics. And, NGA plays a support role to the Department of Homeland Security and other mission partners to make events like the Olympics safe. It’s a great example of how we apply GEOINT to real world issues.

[Demonstration.]

I want to add that we’re also actively pursuing mobile apps for this kind of data. For example, our Disconnected Interactive Content Explorer, which we refer to as DICE, is an app that allows users to load interactive content to a mobile device so the device can display interactive content without a network connection. And there’s ASAM, our Anti-Shipping Activity Messages app, which includes the locations and descriptive accounts of specific hostile acts against ships and mariners. Both are available for Apple and Android users. Check them out ... no, not now!

But, we want our customers to be able to pull out their smart phones and tablets on the go, and get the same type of enriched analysis they can get sitting at their desks. The reality of working in intelligence

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and combat support is that pursuing new data and achieving new capability requires balance. A balance between speed and accuracy. A balance between crowd-sourced and pedigreed data. A balance between national security needs and civil liberties. A balance between openness and protection. There are solutions to be had, but they are elusive.

Here's what I'll tell you: I believe we – all of us in this room – have arrived at a moment. We need to develop a strong partnership – with industry, with academia, with other federal agencies – with you. In order to meet our National Security needs, we have to innovate – and fast. The current set of commercial tools won't suffice to meet our future national security challenges.

I've spent most of our time this morning talking about what we've accomplished so far, and what we'll accomplish in the future. Let me close by telling you what is still in the offing.

We need solutions that will:

Enable our analysts to have simple, easy access to big data—and to not just look through massive amounts of data to find single answers, but to use the bigness of data to uncover patterns that are not obvious without looking at the whole;

Equip our analysts to make sense of all that data—and do so when the data are not geographically contiguous or temporally synchronous;

Provide more and streamlined capabilities—and to do so when users are disadvantaged--limited by low bandwidth or network access challenges;

Move further toward anticipatory, instead of responsive, analysis—and to do so when there is no known starting point for understanding the pattern you're seeing;

Establish on-the-fly analytic services and tools—and make them so flexible that they adapt to the trial and error that is required to answer complex questions; and

Develop better modeling capabilities – or, to put it another way, to provide better tools to capture knowledge in a useful, repeatable manner.

I will add one more challenge—and it's one that all of us in government face, whether local, state, or federal: Data assurance – for want of a better term. We have an embarrassment of riches when it comes to content today. Whether social media, commercial imagery, or Voluntary Geographic Information, there is so much available to us that was not produced for us. And it can help. But when we, the government, provide it, there is an expectation that it is somehow, validated.

How are we going to do that? What can we do that assigns some probability of correctness to data that is available, but not ours? Tick tock, team. We've got to get on this one. I couldn't agree more with what Edwin Land—an icon in MY business—once said: “Don't take on a project unless it is manifestly important and nearly impossible.”

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We have come a great distance, but there is distance still to travel to deliver on the promise of GEOINT to attack the challenges—opportunities—of the day. But we’ve made a bit of magic—together—over the course of the year and I know there is more to be had.

When we match government’s purpose, resources, and years of tradecraft to industry’s energy and innovation, good things happen. And if you are wondering why you care—why you care whether we move to the cloud, whether we deliver a portal, whether we embrace GEOINT services—it is because of this truth: When we address OUR vexing, complex, nearly impossible challenges, we force the development of capability that addresses yours. And THAT, is a good day.

Thank you so much for having me.

Jack, would you like to join me?

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