WRITTEN TESTIMONY for Walter Scott

Written Testimony

Statement of Walter Scott
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Chairman Babin, Chairman Bridenstine, Ranking Member Bonamici, Ranking Member Edwards, and distinguished members of the subcommittees, on behalf of DigitalGlobe, I would like to thank you for the opportunity to testify on the viability and steps needed for successful public-private partnerships in support of future earth observation systems and associated NASA data requirements.

Importance of Earth Observation Systems

Imagine if there were fewer instances of hunger, thirst, strife, and sickness around the world. Undoubtedly, this would lead to increased global stability and greater quality of life for mankind. Earth observations systems are a fundamental component of the protection of human life and property, economic growth, national and homeland security and scientific research. Today, we have an opportunity to observe the earth in ways that can alert us to new risks, better inform decisions, and create new opportunities for societal advances. Because our planet is constantly changing, there is a great need for products and services that deliver accurate, current information about the environment in which we live and operate.

The Landsat program introduced the world to satellite earth imagery in 1972, and high-resolution satellite imagery was commercialized and brought to market in 2000. In fact, it was this committee who was instrumental in enabling the commercialization of satellite imaging technology with its support of the original 1992 Land Remote Sensing Policy Act. Since that time, private sector activity within the remote sensing industry has experienced significant growth and taken on an increasingly larger role in serving the U.S. government, its allies, and a broad range of commercial industries, from the online mapping and technology sector, to energy, to financial services. In many ways, the satellite imaging industry represents an ideal model for public-private partnerships, given the increasing demands from the public sector and the private sector's ability to accelerate innovation and build the necessary capabilities to meet these demands and deliver value.

About DigitalGlobe

DigitalGlobe is a satellite imagery and geospatial information company driven by our purpose of Seeing a better world™, which guides all that we do. We are a leading global provider of commercial high-resolution earth observation and advanced geospatial solutions that help decision makers better understand our changing planet in order to save lives, resources, and time.

DigitalGlobe is a publicly traded U.S. company, headquartered in Westminster, Colorado, with nine offices around the world that collectively employ approximately 1,300 people.

DigitalGlobe owns and operates the world's most advanced commercial satellite imaging constellation, with four satellites (WorldView-1, WorldView-2, GeoEye-1, and WorldView-3) that collect more than 1 billion sq. km. of sub-meter-resolution imagery per year, six times the land surface area of earth each year. We will launch our next satellite, WorldView-4, next September, which will extend our leadership in the industry. We have invested significant resources in building unique capabilities that enable us to be a trusted mission partner that enables military planning and operations, informs policy-making, intelligence analysis, navigation, and humanitarian/disaster relief.

To put our capabilities into context:

- DigitalGlobe maintains the industry's deepest archive of high resolution imagery, with more than ***6 billion sq. km.*** of imagery -- 40x the world's landmass -- spanning ***15 years*** of satellite collections.
- We manage a total commercial data volume of approximately 100 petabytes, to which we add 10 petabytes annually.
- We are able to capture imagery of anywhere on earth multiple times per day.
- Some of our satellites see parts of the spectrum beyond what the human eye can detect, and this valuable information can tell us, for example, what material a building's roof is made of, where are the solar panels, what type of mineral we are looking at, or the health and type of vegetation we are looking at.
- Our satellites can see objects as small as home plate on a baseball diamond.
- Our archive houses an exponentially growing amount of metadata about the world, with detailed particular information behind each image captured, which further allows our users to understand the world around them.

Our Experience with Public-Private Partnerships

DigitalGlobe has been a trusted partner of the U.S. Government for more than a decade. In 2010 DigitalGlobe entered into its most recent long-term partnership with the National Geospatial-Intelligence Agency (NGA). As you are aware, NGA is the nation's primary source of unclassified geospatial intelligence, or GEOINT for the Department of Defense and U.S. Intelligence Community. What you may not know is that DigitalGlobe provides NGA with over 90% of its foundational earth imagery requirements, supporting operational mission planning, disaster response and recovery, and situational awareness. We do so through EnhancedView, our 10-year (one base year plus nine option years), firm fixed-price contract. EnhancedView is a Service Level Agreement (SLA), meaning that the government only pays for the products and services it receives -- not the infrastructure, overhead, and workforce costs that accompany traditional government acquisition programs. In this case, NGA receives first-priority tasking access to our high-resolution imagery satellites and unclassified imagery products that can be shared broadly to support national security requirements.

Rationale and Benefits of Public-Private Partnerships

NASA has an unmatched legacy of innovation that is the envy of national space programs around the world. But for any agency that grew up doing the impossible, there is a tendency to approach every problem, no matter how mundane, with the same approach. This was great for missions like putting a man on the Moon or sending a spacecraft to Pluto. It's not so great for problems that no longer occupy the bleeding edge, and which can either be partially or completely addressed by current or emerging commercial data sources.

Furthermore, the U.S. National Space Policy of 2010 was extremely prescriptive in its position on the U.S. Government's acquisition and use of commercial space services. Specifically, U.S. departments and agencies were directed to:

- Purchase and use commercial space capabilities and services to the maximum practical extent when such capabilities and services are available in the marketplace and meet United States Government requirements;
- Actively explore the use of inventive, nontraditional arrangements for acquiring commercial space goods and services to meet United States Government requirements, including measures such as public-private partnerships, hosting government capabilities on commercial spacecraft, and purchasing scientific or operational data products from commercial satellite operators in support of government missions; and
- Develop governmental space systems only when it is in the national interest and there is no suitable, cost-effective U.S. commercial or, as appropriate, foreign commercial service or system that is or will be available.

The numerous U.S. agencies that rely on space-based capabilities have been pursuing innovative commercial partnerships in recent years as a result of this Policy. NASA itself is, of course, very familiar with these types of arrangements, having implemented them to resupply the International Space Station, and, eventually, send U.S. astronauts there. The U.S. Air Force has pursued a number of opportunities to host U.S. Government payloads on commercial spacecraft, and it plans to outsource the operation of its Wideband Global Satcom (WGS) communications satellites to a commercial firm next year. If successful, this program could serve as a pathfinder for commercial operation of other government constellations such as the Global Positioning System, service officials have said. And, of course, NGA's EnhancedView program.

To that end, we believe these kinds of innovative public-private partnerships can and do provide specific, considerable advantages to the U.S. government:

- **Cost Savings.** An SLA allows the government to know exactly what it will be paying to fulfill its needs, as it encompasses everything required to build, launch, and operate a system under a firm fixed-price contract. DigitalGlobe has invested billions of dollars not only building its fleet, but also the secure operations, a global network of a dozen ground stations, and a communications and processing infrastructure that supports operations.

Additionally, we are able to provide a greater value to the government because costs are spread across both USG and commercial customers. In all actuality, it's not only far cheaper than acquiring a similar USG-owned capability, but it's also a fraction of market price.

- **Mutual interest in delivering performance and value.** As a commercial company, DigitalGlobe succeeds only when we provide value to our customers. If we do not provide the value demanded by our customers, including the NGA, then we will not succeed as a commercial company. It's the difference between building a house for someone else, and building the house that you live in yourself. This is why we have delivered such a high level of performance to NGA; despite the very high—and increasing—level of performance they demand, we have exceeded this performance for the past consecutive 40 months without fail.
- **Innovation**. As a commercial company in a highly competitive industry, we must constantly innovate to meet the needs of our customers, which operate on much faster product cycles than the government. This has a reciprocal benefit for the U.S. government, our largest customer, as it leverages investments we make to serve our commercial customer base, driving greater efficiencies in the products and services we deliver. We are pleased to see that NGA, our largest customer, is leaning forward in leveraging this trend of commercial innovation.
- **Sharable**. In today's coalition environment, sharable information is essential. The unclassified nature of our imagery means that it is actually possible to share with our allies and coalition partners. Our imagery provides credibility and transparency when dealing with geopolitical issues across the world. For example, in 2014, following the crash of Malaysia Airlines Flight 17, the Director of National Intelligence released DigitalGlobe imagery to show Russia's involvement in Ukraine. In releasing the images, the Pentagon stated that the photos "provide evidence that Russian forces have fired across the border at Ukrainian military forces, and that Russia-backed separatists have used heavy artillery, provided by Russia, in attacks on Ukrainian forces from inside Ukraine." However, sharable does not mean publicly releasable, as I'll speak to in the next section.

Keys to a Successful Public-Private Partnership

While there are many significant advantages to public-private partnerships, there have also been some tough lessons learned in the past decade. In considering the viability of a public-private partnership to support NASA's Earth observation program, we would stress a few important considerations in order to ensure that any program is successful:

- **Balance the needs of the U.S. government with your commercial partner.** As a business, DigitalGlobe has a responsibility to deliver a return to its shareholders. Given the capital-intensive nature of our business, we must invest significant resources and capital to build the required network and satellites to be a mission-critical partner for an agency like NGA. Much like computer software companies, we make our money by building—or collecting—once, then selling (or, more accurately, licensing) that imagery multiple times to different customers. As such, if a customer is allowed to widely or freely disseminate our products, then their commercial value is diminished or outright

destroyed. There is potentially a model in which we could make all of a certain type of imagery publicly available, as Landsat data is today, but at a much higher cost to the Government in order to offset the opportunity cost of not being able to sell it to other customers. The Government would need to make the tradeoff between completely open availability at much higher cost to the Government versus, for example, a lower cost for open availability for research but not for open dissemination.

- **Promote a predictable regulatory regime designed to enable innovation.** Our industry is regulated by statute to ensure compliance with U.S. law, foreign policy and national security objectives. It must be recognized, however, that most of the current regulations were written in a time where there were very few players outside the government capable of remote sensing. Since that time, the world has changed drastically and technology is moving at a pace like never before. This begs for regulatory reform that will encourage this innovation and allow U.S. companies to stay ahead of their international competitors, instead of burdening them with outdated, unnecessary administration. Regulatory overreach or regulations that are improperly applied are having great impacts to industry—it stifles progress and creates an uneven playing field for U.S. commercial companies competing with foreign subsidized competitors. A consistent approach to both regulation and licensing can send an important signal to commercial entities that you welcome their involvement and are committed to being a strong partner over the life of a contract. The U.S has played a critical role as an international leader in the space industry, and to maintain and extend our leadership, we need a regulatory framework that ensures that leadership, staying well ahead of—not simply achieve parity with—foreign competition. The U.S. government must tailor policy and regulations to reflect the fact that remote sensing is no longer a U.S. only, exclusively government based effort, but instead a global technology that contributes to national security, commerce, disaster relief and so much more. After all, when the original legislation was passed in 1992, the Internet had only been available to the public for a little over a year; today, well billions of people use the Internet on their desktops and smart phones to access satellite imagery. It's a vastly different world today; shouldn't the regulatory framework be updated to reflect that?

- **Promote transparency and stability in budgetary process**. The budget climate in Washington presents risks for any industry that works with the federal government. The near-constant commentary about potential cuts to defense spending has led to annual speculation—no matter how unfounded—about whether the NGA can renew DigitalGlobe's SLA, which accounts for a significant portion of our revenue base. The perceived uncertainty often impacts our ability to make long-term planning decisions and investments that would ultimately benefit our U.S. Government customer.

Unleash the Power of Public data sets

It's not enough to simply collect data if it can't be accessed by its end users. Public-private partnerships also provide a means for Government to get data into the hands of its end users and to do so efficiently and cost effectively. For example, DigitalGlobe operates the Global EGD ("Enhanced GEOINT Delivery") system on behalf of NGA for making high resolution,

orthorectified satellite imagery available to an estimated 100,000 government end users as quickly as 12 minutes after it has been acquired. We support our commercial customers utilizing the same platform for the data they have rights to access.

Similarly, we've leveraged the power of public cloud infrastructure, such as that offered by Amazon, to enable Government and commercial users to perform big data analytics via our Geospatial Big Data (GBD) platform against our enormous archive of imagery. By leveraging cloud storage, cloud computing, data enrichment and analytic tools, and user-friendly application programming interfaces, customers no longer need to have imagery or GIS expertise, or own and operate heavy IT infrastructure, to extract useful information from huge imagery files. By enabling users to bring their own algorithms and expertise to our data to do heavy data analytics in the cloud, we've created an entirely new ecosystem of applications and use cases for our imagery.

The result has been incredible interest from non-traditional earth imagery users. In the past year, we've partnered with new companies that are using our imagery and platform to manage and monitor commercial forests, track global-scale economic indicators for financial institutions, and demonstrate the technology for a commercial drone air traffic management system. We believe that there are opportunities to extend this model to Government funded datasets such as Landsat and other earth observing systems, leveraging the scale with which commercial providers such as DigitalGlobe are already operating at versus replicating this from scratch.

Closing

Thank you again for the opportunity to provide an overview of DigitalGlobe and our unique public-private partnership with the NGA. It has been our honor to work with a partner like the NGA, which is unwavering in its efforts to secure our nation. We share a commitment to service and it's why so many of our employees have chosen to spend our careers at DigitalGlobe. There is no higher honor than serving those who serve our country, and this is how we live up to our Purpose of Seeing a better world™.