



● ● Tony Bardo, Assistant Vice President at Hughes Government Solutions

Whether your agency oversees the nation's food supply, protects our borders, delivers distance education in rural areas, or makes the world a safer place, Hughes delivers cutting-edge broadband solutions with the power to transform your agency's operations.

HughesON™ is a cost-effective, comprehensive suite of managed network solutions designed to meet the unique needs of the distributed agency and to deliver secure, reliable, high-speed broadband connectivity to all of its sites, wherever they are located. From high-capacity access to high-availability networks, from digital signage to employee communications and training, from managed security to managed WiFi, HughesON enables you to cost-effectively serve your constituents, engage your employees, and streamline your operations.

And Hughes advanced satellite solutions can be used as a primary broadband network or as a backup to complement landline networks—or both. By offering true alternate communications paths, Hughes helps Federal agencies meet their missions and maintain continuity of operations (COOP) even in the event of a disaster.

# GMC

## Q&A

## Changing market sector ●●

Hughes Government Solutions delivers a multitude of network and communications solutions to federal, state and local government organizations. The company provides connectivity to critical remote locations, helps agencies prepare for and respond to disaster events and emergencies, and offers training management platforms. With verticals in law enforcement, park services, telehealth and education, Hughes Government Solutions plays a vital role in keeping our government connected. Amy Saunders met with Tony Bardo, Assistant Vice President at Hughes Government Solutions, to talk about the changing market sector and new growth opportunities.

### **GMC: Can you provide an overview of the development of Hughes Government Solutions, including major milestones reached along the way?**

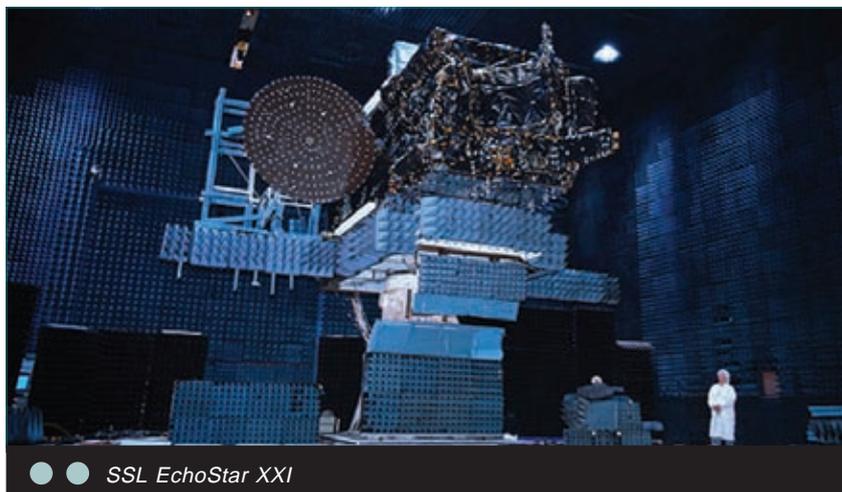
**Tony Bardo:** Our Government Solutions group at Hughes has come a long way since it was launched just over a decade ago. When we first got started, we had to make our commercially available solutions 'government-ready.' Easier said than done given the security measures that the government networks require. Luckily we already had extensive experience as a company deploying some of the most secure networks in the world for things like banking, lotteries and Point of Sale (PoS) transactions.

As our division grew, we became more and more familiar with our government customers and we took the time to learn about what level of performance they really need to get out of their networks. We always strive to develop solutions that are tailored to the requirements of our customers and try and avoid offering a 'one size fits all' type of solution. This approach has allowed us to deliver critical solutions for our customers that help ensure mission success on their side.

### **GMC: What services and solutions does Hughes Government Solutions provide, and to which end users? How have these changed since the company's founding?**

**Tony Bardo:** Hughes Government Solutions brings commercial best practices to the government. The private enterprise market is often a good model for government operations because they are always striving for lower cost and higher efficiency, much like the government. Whether an agency needs digital signage, managed network services, cloud based training platforms or of course, satellite communications, we have proven solutions at reasonable costs thanks to the large success we've had supporting private enterprises for over four decades.

In terms of how our services have changed over the years, as the requirements of the federal government have evolved, so have our offerings. Our services and solutions are constantly re-evaluated to ensure we're meeting the needs of the government end-users. As a top three nationwide managed network services provider (by number of end points managed), we have a unique insight into some of the newest technologies that will be helpful to government agencies. In today's era of IT modernization, this is critical because agencies are facing real bandwidth and other challenges across their networks, but they're also facing budget uncertainty in today's political climate. We offer solutions that can not only streamline their network operations but also save them money.



● ● SSL EchoStar XXI

**GMC: Where does Hughes Government Solutions see itself in the market, and how does it distinguish itself from its competitors?**

**Tony Bardo:** As the global leader in broadband satellite networks and services, Hughes cut its teeth deploying the most complex networking technologies – 22,000 miles above the Earth. Because of that, our engineering expertise brings leading-edge communications solutions to federal and state agencies, especially as it relates to mission-critical capabilities like disaster response and back-up connectivity.

Satellite back-up from Hughes offers a higher level of resiliency to any critical network that is dependent on local terrestrial infrastructure. Tornadoes, floods, earthquakes and other disasters can wreak havoc on local network lines and cellular towers. Implementing satellite backup at critical network sites can keep government networks up and running during and after disasters.

Hughes has mastered backup technology for NG9-1-1 and other critical government networks by enabling an automatic and seamless switch from a failed terrestrial line to over a satellite connection. In fact, the switch happens so fast, if a 9-1-1 operator is on a live call with a citizen and the primary network becomes disrupted, the switch is made without any interruption or packet loss on the call. This is technology that is gaining a lot of momentum ever since we launched our latest satellite, EchoStar XIX, which enabled us to offer 25 Mbps download speeds from coast to coast. The broadband tier speeds allow new NG9-1-1 systems to maintain their newfound capabilities in text-to-911, sending photos and video messages, accurate cellular location among others. We have carved a niche in helping agencies maintain uninterrupted connectivity both during disasters and in everyday operations, as we also connect hundreds of remote government operational locations that had no other means of high speed connectivity.

**GMC: We've seen remote connectivity solutions for surveillance and monitoring boom in recent years for many applications, particularly in the government. How big an opportunity has this been for Hughes Government Solutions, and how has the company responded to this new demand?**

**Tony Bardo:** Hughes offers some of the best machine-to-machine (M2M) communications solutions available today. If an agency has a surveillance system in place and wants to automate the streaming of data from that location to another (regardless of where), we have affordable systems that enable and streamline this capability. We've worked with utilities, border security organizations and many others to deliver solutions that need to meet very specific requirements for the end users.

**GMC: Governments the world over still rely heavily on terrestrial communications networks, despite their vulnerability in the face of terror attack or natural disaster. How do you think they can reinforce their capabilities in a cost-effective manner?**

**Tony Bardo:** Keeping mission-critical applications up and running when disaster strikes is vital to ensure agencies have fast and secure access to information, and can respond in an effective and coordinated manner. It is crucial to have a highly-reliable and path-diverse network architecture in place should terrestrial landlines become inoperable from a disaster. Network availability is something Hughes specializes in and takes very seriously due to the critical nature of many of the networks we support.

That said, there is a critical misconception in communications. That misconception is centred on diverse and redundant connectivity from agency headquarters to branch offices. Many agencies believe appropriate redundancy can be created by having two terrestrial-based communication networks through separate carriers.

However, diversity of carriers does not mitigate their outage

risk because the communication lines, while from different carriers, often run through the same infrastructural conduits in and out of a site or are close enough to share the same physical vulnerabilities in a disaster. Agencies need to look for *path-diverse* connectivity to ensure operations remain online. This means backing up primary and secondary terrestrial networks with satellite because it does not share the same risk as local ground-level infrastructure.

With satellite broadband communications networks, first responders, senior emergency response teams, public safety officials and other key stakeholders can be assured that their network will enable critical applications to stay up and running and they will be able to communicate and share vital information during and immediately after the crisis.

**GMC: Which government customers view path diversity as an integral part of their operations, and how do they differ from those that do not?**

**Tony Bardo:** Unfortunately, I can't speculate the views of our government customers and their thoughts on path diversity, largely because the networks we backup are often critical in nature and thus, publicizing them in any detail would not be in line with the goals of our customers.

That said, I would like to call out the great work that the Department of Interior (DOI) is doing in leveraging satellite technology. They creatively leveraged satellite technology to connect their many disparate locations, which has been an ongoing challenge over the years for DOI.

In the past when agencies sought to upgrade their connectivity, they would often find that their need for increased capacity and additional bandwidth exceeded the limitations of traditional MPLS T1 lines. Agencies would try and continue to add one or multiple T1 lines to their sites, where each T1 is limited to a speed of about 1.54Mbps per line and can cost hundreds of dollars per line per month because cost is directly related to the distance of the line. This approach usually yielded the same result - limiting an agency's bandwidth scalability and hampering operational budgets and overall efficiencies.

Seeking an alternative option that would overcome these shortcomings, the Department of Interior intelligently identified the solution of using a new hybrid network model that complemented existing MPLS network infrastructure with a managed broadband network.

This approach not only provided increased bandwidth and speeds at their remote locations, but also increased the mobility and scalability of DOI offices. Positive results were found especially in the most remote locations, such as, Mt. Denali in Alaska; the bottom of the Grand Canyon; Dry Tortuga, Florida; and Glacier Point in Yosemite, California.

The end result for the Department of Interior was significant cost savings (thanks to low cost-per-bit of broadband), higher network efficiency and substantial bandwidth increases. These benefits enabled higher productivity at DOI sites which had previously struggled to maintain optimal connectivity in the face of network and bandwidth bottlenecks.

**GMC: What does Hughes Government Solutions expect for the rest of 2017 and beyond?**

**Tony Bardo:** For 2017 and beyond, Hughes plans to aggressively educate federal agencies on the importance of legacy network modernization and the role the new EIS and CS3 contracts can play in helping them cost-effectively modernize their networks. We also plan on continuing to build upon the momentum we've experienced in backing up critical NG9-1-1 networks and deploying emergency response networks for disaster and emergency communications.

For long term goals, we plan on showcasing the role satellite technology will play in IoT and 5G environments. You may be surprised by how critical a role satellite will play there, especially when you look at future satellite capabilities like those planned for Hughes JUPITER 3 Ultra High Density Satellite. **GMC**