Simon Hoey, Business Development, Global Government at Intelsat

Intelsat General (IGC) is a US-incorporated, wholly owned subsidiary of Intelsat, operator of the world's first Globalized Network.

IGC provides its government and commercial customers with high-quality, cost-effective, communications solutions via Intelsat's leading satellite backbone and terrestrial infrastructure.

Customers rely on IGC to provide secure and seamless broadband connectivity, video communications and mobility services for mission-critical operations anywhere on the globe through an open, inter-operable architecture.

GMC Q&A

Providing world-class services

Intelsat General (IGC) is a wholly owned subsidiary of Intelsat, operator of the world's first Globalized Network. IGC provides secure satellite communications services to the world's militaries and the US Government. Amy Saunders spoke with Simon Hoey, Business Development, Global Government at Intelsat to discuss the company's latest advances, as well as recent developments in the field of government and military services.

GMC: Intelsat General has made a name for itself in the international government and defence sector, delivering effective, secure and assured communications to many. How have demands evolved over the years, and how has Intelsat General grown to meet these?

Simon Hoey: The need for greater throughput and performance in the satcom arena has grown exponentially over the past decade. At the same time antennas have decreased in size making it imperative that satellite technology advances as well. The only way to accommodate these higher bandwidth requirements with smaller antennas is to increase the power of the satellite itself. In conjunction with these advanced requirements, the global geo-political climate has ensured that security for satellite-based communications is a top priority.

Intelsat developed the Intelsat Epic^{NG} high-performance satellite platform with this type of demand in mind. These satellites have shown greatly improved throughput in the range of 3 to 5 times when tested for Class III, IV and V manned and unmanned ISR platforms. In addition, the Epic^{NG} platform has an innovative digital payload which enhances interference mitigation when compared to wide-beam satellites. This enhanced security helps support one of the highest priority requirements among all government customers: The need for more resilient satellite communications.

Based on this evolving and growing demand, Intelsat has created a Global Government team focused on addressing non-US government requirements. This international team includes staff in Europe, the Middle East and Africa, and the Asia-Pacific region, whose goal is ensuring every international government customer can benefit from the full breadth of Intelsat and IGC's government-focused expertise and best practices.

As my colleague Rick Henry noted recently: "Our goal is to provide world-class service to the government customer, by taking an enterprise-wide approach, no matter where the customer is located."

Intelsat General joined up with General Atomics-Aeronautical Systems Inc. to test the beam switching capabilities of a Block 5 Predator B/MQ-9

GMC: In November 2017, Intelsat General demonstrated the first HTS beam-switching capability of an inflight General Atomics Block 5 Predator B/MQ-9 using the Intelsat 29e satellite. Can you provide more details on this demonstration, and the impact it will have on the relationship between the commercial satellite industry and the US government?

Simon Hoey: Intelsat General joined up with General Atomics-Aeronautical Systems Inc. to test the beam switching capabilities of a Block 5 Predator B/MQ-9 communicating with the Intelsat Epic^{NG} satellite, IS-29e. This test provided proof to both military and civilian organizations of the compatibility of the Intelsat Epic^{NG} platform with the newly-developed beam switching capability on this important unmanned platform. This was the first inflight beam-switching test of an MQ-9 on an HTS satellite. Beam switching is particularly important for US and allied military forces looking to expand UAS operations to high performance, multiple-spot beam, high-throughput satellites such as Intelsat Epic^{NG}.

The UAS's command-and-control and sensor data transmissions from the aircraft were successfully switched between the two beams. The results, verified by GA-ASI, demonstrate a path forward for deployed Reaper and Predator UAS to fly on Intelsat Epic^{NG}.

This was a positive example of the benefits of commercial technology. The Intelsat Epic^{NG} spot-beam design substantially increases the satellite's throughput, allows for use of much smaller terminals, improves performance of existing terminals, and improves the security on the satellite. The Intelsat HTS network and this test assure the government that commercial satellites can provide between 200-300 percent more throughput than existing wideband satellites, including the US government's own Wideband Global SATCOM constellation. We strongly believe that this result will move the government toward more rapid adoption of the Epic^{NG} platform.

GMC: Later in November, Intelsat General released a whitepaper detailing interference mitigation on the Intelsat EpicNG platform, which validated the ability of the platform to mitigate intentional and unintentional interference. Can you elaborate on the content, and explain why it's so important to US and allied military forces?

Simon Hoey: The tests were conducted over the Intelsat IS-29e and validate the ability of the Intelsat Epic^{NG} platform to mitigate attempts by adversaries to intentionally interfere with signals operating on Intelsat's multi-spot, high frequency reuse, high-throughput satellites. This is particularly important for US and allied military forces in hostile theatres throughout the globe. We focused on the government decision makers' need to adopt anti-jam technology to null a jammer when necessary, but without disrupting the user.

The Interference Resolution demonstration used a remote terminal transmitting video to a hub earth station over the Intelsat 29e satellite. During the validation process, technicians transmitted an interference signal on the same channel used to transmit the video.

Once the interference was detected, technicians were able to reconfigure the satellite and the remote terminal thereby re-establishing video transmissions. The reconfigurations (1) terminated the interferer at the satellite thereby clearing the downlink, (2) provided a new, interference-free uplink channel, and (3) connected the new video uplink channel to the original, now clear, downlink channel.

This enhanced mitigation interference, resulting from the Intelsat Epic^{NG} advanced digital payload, is important for government users so they can be assured of secure coverage and connectivity for any operation conducted anywhere in the world, without interruption.

GMC: What are the biggest trends you're seeing right now in the government and military communications spheres, and how do you feel they might develop in the years to come?

Simon Hoey: We see many trends in the government and military sector. New low Earth orbit (LEO) constellations have created quite a bit of discussion around lower latency applications. Our partner, OneWeb, is two years from launching their LEO satellite constellation. We are collaborating with OneWeb in developing integrated GEO/LEO services that will enable government customers to have critical fixed and mobile communications anywhere around the globe. Adding OneWeb's low-latency LEO broadband capacity to our global fleet of GEO satellites, Intelsat General will offer government customers a secure, highly reliable and available level of coverage that can be tailored to meet very specific requirements, including coverage of the polar areas.

As we continue to see opportunities and obstacles in today's data-centric world, governments must learn how to manage complex data and network interoperability and security challenges. They understand that data, after being processed and interpreted, can become a significant force multiplier if it is easily accessible and shared in real or near real time by all US and allied parties. New, highly capable sensors, such as digital recorders, thermal cameras, and hyperspectral imagers, will capture thousands of hours of video footage, and will add significantly more information to this mix of useful intelligence, creating new challenges in using it. Governments realize that this data will only become central to national security missions if they have efficient, flexible and resilient communications networks connecting it all. IGC and its industry colleagues appreciate both of these trends and look forward to supporting government customers as they learn and then manage how to use them.

GMC: With the battlefield becoming increasingly digitised, warfighters are facing new and evolving threats on a daily basis. What steps can be taken to ensure those threats are mitigated?

Simon Hoey: For both civilian and military operations, in increasingly contested areas, warfighters expect broadband connectivity with anti-jamming capabilities. They need to successfully operate in areas prone to all types of adversarial electronic jamming, spoofing, and interference. Intelsat Epic^{NG} is engineered to deliver a more protected level of commercial SATCOM that can specifically mitigate these issues.

Other security threats require various cyber protections like encryption for data moving along the network, to educating network users to better manage their actions to secure the data they use. We continue to develop new and more advanced technologies like these to prepare for the next threat that our customers will face.

GMC: What are your expectations for 2018, for Intelsat General, and for the industry as a whole?

Simon Hoey: I believe that during 2018 companies across the industry will have the opportunity to bring the entire satellite industry into the Fourth Industrial Revolution. The space industry is evolving with exciting innovation that will meet the challenges ahead.

Space is joining the terrestrial and wireless communications sectors in bringing ubiquitous connectivity to support missions no matter where they may be.

As for Intelsat and Intelsat General, the Horizons 3e satellite is expected to launch in the second half of 2018 and will provide Intelsat Epic^{NG} service to the Asia-Pacific region completing our global HTS platform. The IntelsatOne Flex for Aero service, to be introduced this year, will give customers a new managed service with the flexibility to respond to surges in demand and shifts in geographic coverage, as well as a predictable cost structure. HTS, security advances and managed services will help to change military planning and operations for continued superiority in space. **GMC**

We're going to look at different platforms. Technology progresses so rapidly that there are already newer, cooler things we could do if we developed another platform. We're in the process of looking at that right now, as well as developing new hardware products.

We'd like to make it easier for the government to transition to a new platform, so we'll probably build our new products on the Evolution platform with the ability to transition onto a new platform. It'll take us two or three years to develop a new platform, and of course by that time there will be other new things out as well.

GMC: Maintaining growth has been a particular challenge for iDirect Government for some years now, as we've discussed before. Has that changed with the new product line?

John Ratigan: In 2016 we grew a little bit, but I didn't think we were going to grow last year because, even though we had the new products, we didn't have the new software ready. But we actually grew about 10 percent. We think we'll grow another 10 percent this year as well. I expect the next three years to be really good for us.

GMC: The NewSpace sector is really growing up a storm – you can't read a mainstream newspaper anymore without reading at least one article on the topic. Are there any new areas you might be looking into in the future?

John Ratigan: The big thing is high throughput satellite (HTS). The world has gone crazy with bandwidth; there's enough bandwidth in space now for all of us to have our own 100Mbps channel walking around the Earth. We're trying to do everything we can to accommodate what we call the multi-orbital plane. Traditionally in satellite, we've worked at the geostationary level, but now we've got medium Earth orbit (MEO) and a lot of low Earth orbit (LEO). While the LEO constellations aren't up and operational yet, we're doing a lot of research and planning some things into our newer technology that will accommodate those as well.

We always try to be agnostic in terms of satellites. I always define us as the sister router of satellite modems, in that we don't care what you do with it, just as long as you use it. We'll build in as many things as we can into the device so that it can be as flexible as possible. Our products will operate on the Evolution software, which has been our traditional base-level software, as well as our Velocity software. We try to make it easier for the customer.

GMC: We're hearing increasing chatter about the next big bands, Q and V-band. What's your take on using higher bands for satellite communications?

John Ratigan: I don't know if we need it right now. Historically, we just keep going up in frequency, and I know the US government has done some things in Q-band, but it won't make a different to us. Signals come out of the back of our modems in L-band and use a BUC to go to whatever frequency the client wants. Do I think we'll be seeing more of these higher bands in the years to come? Yes; if there's some advantage to going there, I think it'll happen. Typically, the big disadvantage we always see by moving to higher frequencies is that more things can affect the signal like rain and atmospherics, but I think it'll happen eventually anyway.

GMC: Every company has its own unique challenges. What are the biggest challenges you're facing right now?

John Ratigan: One of the biggest challenges is always: How do we get things done in the timeframe we want to get them done in? We're trying to serve the world, and in doing that, we're trying to do too many things at the same time, trying to make everybody happy. On the iDirect Government side, we're going to expand our internal engineering teams so that we can focus a greater amount of resources on the US government. I think that's going to benefit us tremendously.

GMC: In 2017, iDirect Government celebrated 10 years of operations. What are your expectations for the next 10 years?

John Ratigan: I'm thinking about next month, and you're asking about 10 years! We expect to continue to grow our company, and we've been challenged by the ownership to do that. We want to continue to expand our presence with the US government; we're not necessarily that big, but we're really good at what we do and very focused. We'd like to expand upon what we're already doing, with more products and potentially services as well. I feel 10 percent growth per year would be good, we wouldn't be unhappy with that, so we're looking at a variety of different avenues to achieve that. In 10 years, I would expect us to be at least twice the size that we are now; twice the revenue, twice the profit, and a much bigger product line. We'll probably manifest ourselves differently in 10 years, especially with everything moving to the cloud. We may be operating very small devices that have to be attached to the Internet in some way, and I suspect we'll do more with smaller products, UASs, etc. There's a lot of different things we'd like to pursue. **GMC**

Photo courtesy of iDirect Government