

Hughes and SES Demonstrate First Multi-Orbit SATCOM for Remotely Piloted Aircraft

September 22, 2021

Hughes Resource Management System Seamlessly Switches Signal across SES's Geostationary and Medium Earth Orbit Satellites, Supporting Secure Connectivity for ISR, Even in Contested Environments

GERMANTOWN, Md. and LUXEMBOURG, Sept. 22, 2021 /PRNewswire/ -- [Hughes Network Systems, LLC](#) (HUGHES) and [SES](#) today announced the successful first demonstration of a new multi-orbit satellite communications (SATCOM) capability for remotely piloted aircraft. Conducted for General Atomics Aeronautical Systems, Inc. (GA-ASI), the demonstration paired Hughes HM series software-defined modems and Resource Management System (RMS) with SES's satellites that operate in geosynchronous (GEO) and medium earth (MEO) orbits. SES's unique multi-orbit fleet, which delivers global coverage, high throughput and security, was leveraged to show how unmanned aerial vehicles, such as the GA-ASI MQ-9 series, can maintain crucial connectivity and resiliency, even in contested environments.



We demonstrated 3X the throughput of currently deployed SATCOM services using a terminal less than half the size.

The demonstration replicated a typical unmanned Intelligence, Surveillance and Reconnaissance (ISR) mission, transmitting high-definition video and sensor data to and from the unmanned vehicle to the command center. Based on the mission's pre-set policies, the RMS automatically switched the satellite signals to stay connected – even when a signal experienced interference and jamming scenarios. A quasi-instant and smooth beam switch took just seconds to complete, allowing a near real-time capability that enhances the military's Primary Alternative Contingency Emergency (PACE) planning.

"Our multi-orbit demonstration for remotely piloted aircraft delivered three times the throughput of the currently deployed SATCOM service using a terminal less than half the size, while maintaining constant connectivity," said Rick Lober, vice president and general manager, Hughes Defense. "This highly resilient, significantly reduced SWAP option for primary and secondary aero connections unlocks new beyond-line-of-sight mission opportunities for unmanned aerial vehicles like the GA-ASI MQ-9. It's another example of how Hughes empowers our military to exchange information securely with the right people at the right time."

"SES's second-generation MEO system, O3b mPOWER brings a new age of game changing performance, scalability, and resilience that will enable us to deliver the network sovereignty that governments are looking for," said Will Tong, vice president of Strategic Government Initiatives and Head of the Aero ISR market at SES Networks. "The demonstration we did with Hughes showcases the power of the industry's first multi-orbit networked capability to exponentially increase performance utilizing small terminals, while giving end-users the autonomy to provision networks to meet their operational ISR needs. It also comes at a perfect time as we are preparing to launch O3b mPOWER as the showcased solution ensures both high-performance and multiple layers of network resiliency and security for multi-domain operations that involve moving platforms in remote, austere locations."

The demonstration was powered by software-defined gateways and modems from the Hughes HM System, a commercially based, frequency-agnostic, open architecture platform for fixed, mobile and portable government applications. For more information about Hughes Defense solutions, including the HM System, visit defense.hughes.com.

About SES

SES has a bold vision to deliver amazing experiences everywhere on earth by distributing the highest quality video content and providing seamless connectivity around the world. As the leader in global content connectivity solutions, SES operates the world's only multi-orbit constellation of satellites with the unique combination of global coverage and high performance, including the commercially-proven, low-latency Medium Earth Orbit O3b system. By leveraging a vast and intelligent, cloud-enabled network, SES is able to deliver high-quality connectivity solutions anywhere on land, at sea or in the air, and is a trusted partner to the world's leading telecommunications companies, mobile network operators, governments, connectivity and cloud service providers, broadcasters, video platform operators and content owners. SES's video network carries over 8,650 channels and has an unparalleled reach of 361 million households, delivering managed media services for both linear and non-linear content. The company is listed on Paris and Luxembourg stock exchanges (Ticker: SESG). Further information is available at: www.ses.com.

About Hughes Network Systems

Hughes Network Systems, LLC (HUGHES), an innovator in satellite and multi-transport technologies and networks for 50 years, provides broadband

equipment and services; managed services featuring smart, software-defined networking; and end-to-end network operation for millions of consumers, businesses, governments and communities worldwide. The Hughes flagship Internet service, HughesNet[®], connects more than 1.5 million subscribers across the Americas, and the Hughes JUPITER™ System powers Internet access for tens of millions more worldwide. Hughes supplies more than half the global satellite terminal market to leading satellite operators, in-flight service providers, mobile network operators and military customers. A managed network services provider, Hughes supports nearly 500,000 enterprise sites with its HughesON™ portfolio of wired and wireless solutions. Headquartered in Germantown, Maryland, USA, Hughes is owned by EchoStar. To learn more, visit www.hughes.com or follow HughesConnects on Twitter and LinkedIn.

About EchoStar

EchoStar Corporation (NASDAQ: SATS) is a premier global provider of satellite communication solutions. Headquartered in Englewood, Colo., and conducting business around the globe, EchoStar is a pioneer in secure communications technologies through its Hughes Network Systems and EchoStar Satellite Services business segments. For more information, visit www.echostar.com. Follow [@EchoStar](https://twitter.com/EchoStar) on Twitter.

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