# Intelsat EpicNG: Delivering on the Promise of High Throughput with High Performance

September 8, 2016

*Broadband, wireless and mobility customers report higher performance and unprecedented efficiency gains on the Intelsat Epic$^{NG}$ platform*

*Seamless transition to Intelsat Epic$^{NG}$ results in immediate efficiency gains for customers*

*Next generation modulation hardware testing on Intelsat Epic$^{NG}$ demonstrate up to 330% increase in spectral efficiency; Intelsat Epic$^{NG}$ performance will continue to improve as ecosystem advances*

*Demonstrated performance on micro-arrays enables new applications, including high definition video on remotely piloted aircraft, for emerging government and commercial requirements*

LUXEMBOURG--(BUSINESS WIRE)--Sep. 8, 2016-- Intelsat (NYSE: I), operator of the world's first Globalized Network, powered by its leading satellite backbone, today released details of its customers and ecosystem partners achievement of a 165% to 330% increase in spectral efficiency with ground platforms and modem technologies; and up to a 300% improvement in throughput using next generation antenna technology to connect to the Intelsat Epic$^{NG®}$ high-throughput satellite (HTS) platform. Recent tests also confirmed that the Intelsat Epic$^{NG}$ platform exceeds performance expectations transmitting to and from a flat-panel antenna designed for a new class of small remotely piloted aircraft.

Since late March 2016, the first of the Intelsat Epic$^{NG}$ satellites, Intelsat 29e, has been carrying new and transitioning networks, as well as being used in next-generation tests. In all cases, customers and partners report that the platform is meeting and exceeding its performance and efficiency expectations across a range of applications. Whether the 165% efficiency improvement on current networking hardware or the up to 330% efficiency improvement on next generation ground networking technologies, Intelsat Epic$^{NG}$ is delivering on the promise of the high-throughput satellite era.

"Given the insatiable bandwidth demands of businesses operating around the world, we designed Intelsat Epic $^{NG}$ with our customers' needs front and center," stated Stephen Spengler, Chief Executive Officer, Intelsat. "Our design goal, focusing on efficiency and thus optimizing the throughput to the individual network users, has delivered immediate operating efficiencies for our customers. Our customers in the enterprise, mobility and wireless infrastructure sectors are using Intelsat Epic$^{NG}$, in most cases with existing hardware, transitioning seamlessly onto our high performance network. Bottom line, our goals of higher performance, better economics, and simplified access are being proven in operational customer networks. Intelsat Epic$^{NG}$ will support our customers as they expand their businesses into new applications and geographies to realize their long-term growth objectives."

Optimizing Throughput to the User

Intelsat and its customers now have performance experience with the Intelsat Epic$^{NG}$ satellite on six different satellite data networks, emphasizing the benefits of the open architecture, which allows customers to choose the data networking hardware best suited to their applications and business plans. With the advanced capabilities of the Intelsat Epic$^{NG}$ digital payload, customers are also achieving advanced flexibility in terms of satellite resource allocation, including functionality to cross-connect C-band to Ku-band services on a dynamic basis, and carrier-level optimization resulting in much higher performance levels. The Intelsat Epic$^{NG}$ digital payload also creates an enhanced environment for battling interference and mitigating jamming with respect to government applications.

Customers with operational networks and hardware partners testing on Intelsat Epic$^{NG}$ have experienced the following performance as compared to traditional wide beam satellite services:

| Current Data Network Hardware | Antenna Sizes | Intelsat Epic$^{NG}$ Efficiency (bits/Hz) |
|---|---|---|
| Comtech CDM625 | 2.4m | Up to 2.5 |
| Comtech AdVSAT | 1.0 – 2.4m | Up to 2.5 |
| iDirect Evolution | 0.83m – 3.8m | Up to 2.5 |
| | | |
| Next Generation Modems | | |
| Newtec DVB-S2X, 256 APSK | 1.2m-3.8m | Up to 5 |
| | | |
| Next Generation Antennas | | Efficiency Improvement |
| Gilat BlackRay | 15 cm | Up to 3x current |
| GATR-FLEX | 75cm | Up to 4x current |

Unlocking New Applications

With over 30 customers already using Intelsat 29e, the three design objectives of the Intelsat Epic$^{NG}$ platform—backwards compatibility, open architecture and optimized spectral efficiency—are yielding immediate benefits. Field tests are also providing evidence of the potential to unlock new

applications in sectors not currently served by satellite.

Our subsidiary, Intelsat General Corporation, performed tests with a government customer using a 6” by 6” Gilat airborne terminal, BlackRay 71 with a flat-panel antenna, designed for a new generation of small Class III unmanned aircraft system (UAS). The customer sent data from Gilat’s small airborne antenna to the recently launched Intelsat 29e satellite at a rate of 3.9 Mbps. This compares to an uplink rate of about 1.8 Mbps from the small antenna to a conventional Ku wideband satellite. This link was effectively 2 times the rate of and almost 3 times more efficient than traditional widebeam satellites. Transmitting full-motion high-definition video from antennas of this size is unprecedented in the world of satellite communications, and has applications in both military and commercial sectors.

Transitions Seamless; Advanced Features Tested

Operationally, Intelsat Epic$^{NG}$ service activations have been seamless, as customers easily transitioned to or brought up services on the platform. Further, the Intelsat 29e digital payload features are in wide use, with customers easily operating between both wide and spot beams. Intelsat’s teleport ground station RF calibration and performance were validated as were the platform’s forward and return service performance.

“Based upon our experience with live networks, we’re proving every day that the higher performance, improved economics and simplified access enabled by Intelsat Epic$^{NG}$ will position enterprise, fixed and mobile network operators and maritime and aeronautical service providers to rapidly scale networks on a global basis, while staying ahead of explosive data-performance requirements. Our ecosystem is engaged and energized by the expected results and the benefits to be realized by our global customer base in the enterprise, wireless, mobility and government sectors,” said Kurt Riegelman, SVP, Sales and Marketing, Intelsat.

Supporting Resources:

- Blog Post by Stephen Spengler: Taking HTS from Promise to Full Potential http://www.intelsat.com/intelsat-news/taking-hts-from-promise-to-full-potential/
- Introducing Intelsat 33e: https://youtu.be/-PnrTDULkYQ
- About Intelsat Epic$^{NG}$: http://www.intelsat.com/global-network/satellites/epicng/

About Intelsat

Intelsat S.A. (NYSE: I) operates the world’s first Globalized Network, delivering high-quality, cost-effective video and broadband services anywhere in the world. Intelsat’s Globalized Network combines the world’s largest satellite backbone with terrestrial infrastructure, managed services and an open, interoperable architecture to enable customers to drive revenue and reach through a new generation of network services. Thousands of organizations serving billions of people worldwide rely on Intelsat to provide ubiquitous broadband connectivity, multi-format video broadcasting, secure satellite communications and seamless mobility services. The end result is an entirely new world, one that allows us to envision the impossible, connect without boundaries and transform the ways in which we live. For more information, visit www.intelsat.com.

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