



Infinera Breaks Real-time Subsea Spectral Efficiency Records with 6.21 b/s/Hz on 6,644 km MAREA Trans-Atlantic Cable

Singapore – September 26, 2018, 8:00 a.m. EDT– Infinera, provider of [Intelligent Transport Networks](#), announced the successful completion of a series of record-breaking submarine field trials over MAREA, a 6,600-kilometer (km) submarine cable between Virginia Beach, Virginia and Bilbao, Spain.

The trials used Infinera’s fourth-generation Infinite Capacity Engine (ICE4) advanced coherent technology to achieve new records for trans-Atlantic real-time spectral efficiency:

- 6.21 bits per second per hertz (b/s/Hz) over 6,644 km, translating to a fiber capacity of 26.2 terabits per second (Tb/s)
- 4.46 b/s/Hz over 13,210 km for 18.6 Tb/s fiber capacity

Details of the trial were presented by Scott Jackson, Infinera Subsea CTO, at the Submarine Networks World conference this week. To achieve the record-breaking results, Infinera employed several advanced technologies including precision, multi-carrier common wavelocking based on Infinera’s large-scale photonic integrated circuit (PIC), digitally synthesized subcarriers with “near Nyquist” pulse shaping, enabled by the ICE4 real-time coherent digital signal processor, and operation over a high-optical power, large-area optical fiber cable.

Bandwidth-hungry applications and cloud-scale architectures are driving the need for dramatically increased subsea network capacity. Meeting these demands requires a combination of a cutting-edge optical wet plant and real-time advanced coherent transmission systems. Historically, trans-Atlantic cables have not been able to use higher order modulations, such as 16 quadrature amplitude modulation (16QAM), to achieve higher capacity. Several technology advances helped overcome this limitation. These include modern, large effective area subsea cables that improve the reach for higher order modulations. Combining this with a range of advanced coherent technologies and unique properties of a PIC implementation, Infinera successfully validated 16QAM over unusually long distances, using exceptionally tight channel spacing.

“We were thrilled to have an opportunity to work with a major internet content provider to demonstrate Infinera’s leading innovation in spectral efficiency over the MAREA cable system,” said Dr. David Welch, Co-Founder and Chief Strategy and Technology Officer of Infinera. “Infinera’s ICE4 technology has continually delivered in optical performance for our customers over the past year. This latest example, in a production platform, allowed upwards of more than 30 percent increased spectral capacity over other supplier technologies that are available today. We will continue to advance our large-scale photonic integration to maximize capacity and continue industry leading performance for the benefit of our customers.”

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About Infinera

Infinera (NASDAQ: INFN) provides Intelligent Transport Networks, enabling carriers, cloud operators, governments and enterprises to scale network bandwidth, accelerate service innovation and automate optical network operations. Infinera's end-to-end packet-optical portfolio is designed for long-haul, subsea, data center interconnect and metro applications. To learn more about Infinera visit www.infinera.com, follow us on Twitter @Infinera and read our latest blog posts at www.infinera.com/blog.

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