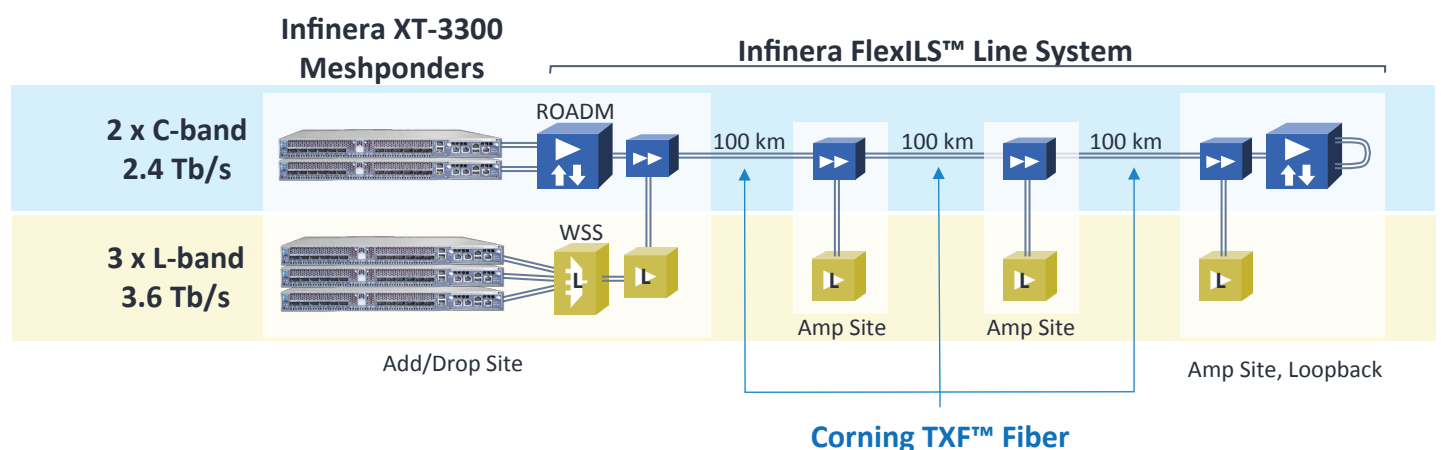


Extended Capacity For Next Generation Long-Haul Networks

Corning and Infinera demonstrate 55 Tb/s capable transmission equipment operating in C+L bands across 600 km of G.654.E compliant ultra-low-loss, large effective area fiber

Corning and Infinera, two of the most innovative suppliers to the optical communications industry, are joining together to demonstrate how a powerful combination of advanced transmission equipment and optical fiber can address the escalating challenge of providing sufficient capacity in long-haul networks. In a live demonstration in the Infinera booth (4547) multiple Infinera XT-3300 systems are transmitting simultaneously in C+L bands across an Infinera FlexILS™ line system connected by a 6 x 100 km span link of Corning® TXF™ optical fiber. The demonstration illustrates a complete solution for scaling fiber capacity up to 55 Terabits per second (Tb/s) by employing the broader optical spectrum of the C+L bands.

Infinera C+L Demonstration with Corning – OFC 2018



Traditionally, the established range of operation for long-haul networks is in the C-band (1530–1565 nm) in which the lowest optical fiber attenuation is to be found. Building on technology that has been extensively deployed already in submarine networks, TXF fiber combines ultra-low-loss (typically 0.168 dB/km at 1550 nm) with a large effective area (typically 125 μm^2) and cut-off wavelength shifted to just below the bottom of the C-band to provide additional bend resistance. Ideally designed for high-data-rate C-band operation, the 125 μm^2 effective area of TXF fiber provides effective suppression of non-linear signal distortions. Combined with ultra-low-loss, this extends reach that can rapidly become restricted as higher speed protocols are introduced. 55% reach improvement was demonstrated for TXF fiber in 200 Gb/s 16-QAM operation*.

As technologies such as Video On Demand, Virtual and Augmented Reality, and Internet of Things create a pull for ever greater volumes of data, Infinera Intelligent Transport Networks continue to deliver optical innovation and increasing capacity required by network operators. Infinera's portfolio of products based on the Infinite Capacity Engine (ICE), which has been delivering leading optical performance in the extended C-band, is now being expanded to operate in the L-band (1565–1625 nm), roughly doubling fiber capacity. TXF fiber is also ideally suited to extending operation out to the longer wavelength region. Optical fiber attenuation remains ~0.02 dB/km lower than conventional fiber at 1625 nm whilst macrobending loss remains low, as required by the ITU-T G.654.E standard.

Corning® TXF™ Optical Fiber

Another in Corning's long line of innovative optical fiber products, TXF fiber combines both ultra-low-loss and a larger effective area to allow error-free, high-data-rate transmission to be achieved over longer spans and extended reach. TXF fiber is compliant with ITU-T Recommendation G.654.E (September 2016), a category of advanced fibers for long-haul terrestrial networks with cut-off wavelength shifted to just below the loss minimized C-band region. The superior attributes of TXF fiber allows for the provision of additional network margin that can be leveraged to extend network span lengths, skip amplification sites, upgrade to higher bit rates, add network components for improved flexibility, or lengthen the distance between regenerators. As a result, long-haul networks with TXF fiber can be designed more efficiently, removing the need for amplification sites to be placed in remote, hostile territories and minimizing the number of regenerators needed, even as higher data rate upgrades with more stringent OSNR requirements are planned.

Infinera XT-3300 Meshponders

The Infinera XT-3300 meshponder is the industry's first small-form-factor, server-like meshponder WDM platform. The XT-3300 blends sliceable photonics and muxponder functionality to deliver cloud scale network services over long-haul, regional and data center interconnect networks. Based on Infinera's Infinite Capacity Engine (ICE4) XT-3300 incorporates Infinera's unique Instant Bandwidth technology for software-defined capacity, sliceable super-channels, support for in-flight wire-speed encryption and the Advanced Coherent Toolkit (ACT) for maximum capacity-reach performance. Since mid-2017, XT-3300 systems have been delivering industry-leading optical performance in the extended C-band. Now Infinera is introducing L-band-capable XT-3300 systems to deliver that same level of performance across a broader spectrum and doubling fiber capacity.

Infinera FlexILS™

The Infinera FlexILS flexible grid line system is the industry's most widely deployed flexible grid open optical line system delivering future-proof scalability, flexibility and programmability for Infinera Intelligent Transport Networks and third-party terminals. FlexILS works with Infinera ICE4-based meshponders to enable uniquely agile and programmable optical transport networks. Operators can deploy FlexILS for extended C-band capacity today and expand to the L-band with a simple, non-service-impacting upgrade when more capacity is needed.

Corning® TXF™ Optical Fiber

- Combined benefits of ultra-low-loss and large effective area
- Typically 0.168 dB/km and 125 μm^2 at 1550 nm
- Fully compliant with ITU-T Recommendation G.654.E
- Exceptional terrestrial reach capability for high channel speed transmission