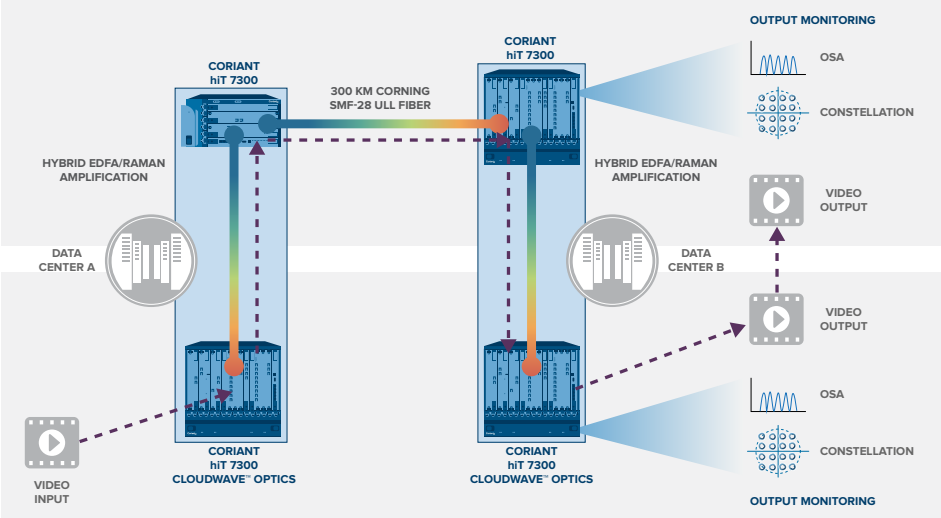
Lowering the Cost of Long Reach, High Performance Data Center Interconnect

Coriant and Corning Showcase DWDM 200 Gbps 16QAM Transmission over 300 Kilometers without Mid-span OLAs

At OFC 2016, Coriant and Corning collaborate to demonstrate DWDM 200 Gbps 16QAM transmission over 300 kilometers without mid-span Optical Line Amplifiers (OLA) or repeaters with the powerful combination of Coriant CloudWave™ Optics and Corning® SMF-28® ULL optical fiber. This live demonstration underscores the best-in-class transmission performance for cost-optimized long reach Data Center Interconnect (DCI). As data centers become increasingly distributed and growth in cloud traffic drives demand for higher capacity DCI links, network operators face the challenge of efficiently scaling transport infrastructure while controlling network and operational costs. This challenge is compounded by an approximately four to five times reduction in the reach of a link due to more stringent OSNR requirements when increasing data rates from 100 Gbps (QPSK) to 200 Gbps using 16QAM modulation, resulting in the need for additional repeaters in the transmission chain to meet performance requirements and end-user service quality.

The Coriant and Corning demonstration will showcase the ability to achieve lower cost per bit and spectrally efficient 200 Gbps 16QAM transmission over 300 kilometers in a practical single span link without the need for mid-span repeaters or amplifiers. The demonstration features Coriant CloudWave™ Optics transmission (in combination with the Coriant® hiT 7300 Multi-Haul Transport Platform) over Corning® SMF-28® ULL optical fiber in a link without intermediate optical line amplifiers. With 50dB of loss in the link, the ultra-low attenuation fiber extends the unamplified transmission reach by approximately 20% compared to a conventional single-mode fiber, without the need for additional installation and operational costs associated with intermediate inline amplifier huts. The DWDM transmission demonstration also showcases the scalability of the link capacity up to 25.6 Tbps at the greater distance using easy-to-deploy co- and counter-propagating laser Class 1M hybrid Raman amplifiers with integrated OTDR functionality.



Coriant and Corning Team to Demonstrate Low cost, High Capacity DCI Transmission with the Powerful Combination of Coriant CloudWave™ Optics and Corning® SMF-28® ULL Optical Fiber

Coriant® CloudWave™ Optics

- Highest capacity with a powerful combination of flexi-grid, super-channel, and pulse shaping technologies
- Flexible, multi-functional provisioning of DCI service bandwidth
- Cost-optimized capacity, reach, and service performance
- Industry leading power and space efficiency, increased spectral efficiency and fiber capacity, and reduced sparing

Corning® SMF-28® ULL Optical Fiber

- Lowest attenuation of any terrestrial optical fiber: Typically 0.16 dB/km at 1550 nm
- Fully compliant with ITU-T Recommendation G.652
- Enables extended reach and reduction of amplifier huts in multi-span links

CORIANT CLOUDWAVE™ OPTICS

Designed for application across Coriant's end-to-end portfolio of packet optical transport solutions, Coriant CloudWave™ Optics is a key photonic layer technology solution that combines a leading signal processing engine, optimized integrated photonics, and embedded software intelligence to bring a new level of optical performance, efficiency, and scalability to infrastructure networks facing unprecedented traffic growth. A key enabler of the Coriant metro and core network transport solutions, Coriant CloudWave™ Optics features software programmable line side modulation, tunable spectral allocation, and channel frequency flexibility. These carrier-class capabilities significantly enhance service flexibility and network scalability in metro, regional, LH, ULH, and Data Center Interconnect (DCI) transport applications. Coriant's packet optical transport solutions include the Coriant Groove™ G30 DCI Platform, mTera® Universal Transport Platform, hiT 7300 Multi-Haul Transport Platform, 7100 Packet Optical Transport Platform, and 7090 Packet Transport Platform.

CORNING® SMF-28® ULL OPTICAL FIBER

Corning SMF-28® ULL optical fiber has the lowest loss of any terrestrial grade single-mode fiber with a typical attenuation of 0.16 dB/km at 1550 nm. SMF-28 ULL fiber has been deployed around the world in some of the most challenging network applications. Ultra-low attenuation can be leveraged to extend network span lengths, skip amplification sites, upgrade to faster bit rates, add network components for improved flexibility, and lengthen the distance between regenerators. Ultra low-loss optical fiber allows network operators to extend optical reach at very high data rates and make networks scalable for higher capacities – important as the demand for bandwidth grows. In concert with advanced optical networking equipment, Corning's ultra-low-loss fiber offers simplicity and reliability for operators. SMF-28 ULL fiber is making it possible for service providers to transmit information across longer distances with less equipment and lower installation, land acquisition, and maintenance costs.

ABOUT CORIANT

Coriant delivers innovative, dynamic networking solutions for a fast-changing and cloud-centric business world. The Coriant portfolio of SDN-enabled, edge-to-core transport solutions enables network operators to reduce operational complexity, improve utilization of multi-layer network resources, and create new revenue opportunities. Coriant serves leading network operators around the world, including mobile and fixed line service providers, cloud and data center operators, content providers, cable MSOs, large enterprises, government agencies, financial institutions, and utility companies. With a distinguished heritage of technology innovation and service excellence, forged by over 35 years of experience and expertise in Tier 1 carrier networks, Coriant is helping its global customers maximize the value of their network infrastructure as demand for bandwidth explodes and the communications needs of businesses and consumers continue to evolve. Learn more at www.coriant.com.

ABOUT CORNING INCORPORATED

Corning (www.corning.com) is one of the world's leading innovators in materials science. For more than 160 years, Corning has applied its unparalleled expertise in specialty glass, ceramics, and optical physics to develop products that have created new industries and transformed people's lives. Corning succeeds through sustained investment in R&D, a unique combination of material and process innovation, and close collaboration with customers to solve tough technology challenges. Corning's businesses and markets are constantly evolving. Today, Corning's products enable diverse industries such as consumer electronics, telecommunications, transportation, and life sciences. They include damage-resistant cover glass for smartphones and tablets; precision glass for advanced displays; optical fiber, wireless technologies, and connectivity solutions for high-speed communications networks; trusted products that accelerate drug discovery and manufacturing; and emissions-control products for cars, trucks, and off-road vehicles.