

Nominee: Corning

Nomination title: **EDGE8™**

The demand for data shows no sign of slowing down. Alongside increasing adoption of cloud computing, the growing demand for virtualisation, big data and video, now the Internet of Things (IoT), virtual/augmented reality and artificial intelligence are driving an industry-wide push towards faster transmission speeds and the evolution of standards for the data centre.

Corning's EDGE8™ Solution is the most future-ready data centre connectivity solution available for simple, efficient and cost-effective migration to transmission speeds of up to 400 gigabits per second.

Our EDGE solutions were the industry's first pre-terminated optical cabling systems specifically designed for the data centre environment and the value that EDGE provides to the industry continues to be proven. However, technology roadmaps clearly indicate that transmission speeds ranging from 4G to 400G will be based on either 2- or 8-fibre connectivity solutions.

That's the motivation behind EDGE8 solutions. All the value of our original EDGE solutions, with the added superior network scalability, improved link performance and 100% fibre utilisation of a base-8 design. It provides a comprehensive solution for connectivity with ultra-low-loss components, including trunks, patch cords, modules and harnesses.

Since launch, the EDGE8 has evolved to provide even greater flexibility in higher speed deployments and numerous refinements to deliver an optimal end-user experience.

Key distinguishing features and/or USPs

Base-8 connectivity makes it easy to match the fibre count in the backbone of data centre networks and SANs for today and prepare for higher speeds in the future. Since its introduction, the EDGE8 solution has continued to strengthen the cabling infrastructure within data centres through a number of key features and benefits:

- **Risk avoidance and 100 percent fibre utilisation:** The technology roadmaps of major switch and transceiver vendors all point to 2- and 8-fibre solutions. By deploying the EDGE8 solution, data centres can be future-ready to support all network architectures and speeds from 1 through to 400G on two and eight fibres with 100 percent fibre utilisation (no conversion is necessary).
- **Increased asset utilisation:** With a 1:1 port mapping ratio, trunks, harnesses and cables match directly with the blade or switch port counts meaning there are no loose “tails” hanging in front of active equipment.
- **Pinned trunks to simplify patching:** Pinning the trunks mean installers only need a single patch cable for all direct connect, interconnect or cross-connect applications, reducing stocking and deployment complexity. Users no longer need to stock different cable types (such as pinned to non-pinned cables).
- **Saves space, time and complexity:** Offers best-in-class fibre density that is easy to install (90 percent faster compared to field termination) and manage for future growth with superior fibre access and intuitive fibre management for moves, adds and changes – providing 25% faster MACs.
- **Ultra-low-loss performance:** All EDGE8 components deliver ultra-low-loss performance as standard, enabling users to exceed specified distances while dealing with the lower loss budgets that higher-speed applications demand.

The tangible impact on the market and customers

EDGE8 solutions are deployed globally due to the high shipment volume of QSFP transceivers and the need for future adoption of higher speeds using parallel optics. The types of transceivers that switch, server and storage vendors are using, combined with the transceiver roadmap guiding the industry from 10G Ethernet to 40G, 100G, and 400G, are moving the industry towards Base-8 connectivity. Light Counting market research shows that Q3 2016 saw the first high-volume shipments of 100GbE optics for mega datacentres and a larger fraction of 100G DWDM line cards shipped in Q3 2016 were equipped with 100GbE client ports instead of 10GbE.

Already, the EDGE8 solution has been taken up and deployed by many customers around the world to address their needs today, solve technology challenges and provide a migration path that



easily scales out to 400G transmission for tomorrow. These are not just early adopters or big technology companies, but also those operating in healthcare, education, financial, transportation, retail and manufacturing sectors.

One significant advantage addressed through collaboration with customers is that of 40G disaggregation for use with 10G applications. Disaggregating 40G ports into 4 x 10G ports (currently only possible with parallel optics) through harnesses or port breakout modules provides significant density advantages both in terms of the attached electronics (and therefore costs) and the housings in the wiring areas. For example, using 40G instead of 10G QSFP line cards for 10G connectivity reduces overall cost per port for the electronics (a smaller footprint) and it means that customers will already have the technology in place when they are ready to upgrade to 40G.

Major differentiators

EDGE8 has expanded its range of solution options, including TAP modules for Ethernet, FibreChannel and BiDi, enabling live traffic monitoring for various applications. The EDGE8 TAP module provides significant data centre space (and cost) savings by having the monitoring functionality contained within the module itself.

EDGE8 is the industry's first modular, pre-terminated optical cabling system to feature an eight-fibre (Base-8) cabling design. The tool-less installation makes EDGE solutions 90% faster to install compared to field terminating.

Eight-fibre MTP® connectors make it easy to match the fibre count in the backbone of data centre networks and SANs with today's Base-8 QSFP transceivers. This results in 100% fibre utilisation, streamlined 1:1 port mapping, and up to 50 percent reduction in link attenuation through the elimination of conversion modules.

EDGE8 trunks are pinned allowing for a single pinless patch cable deployment for all installations, reducing deployment complexity and inventory.

EDGE8 provides an extensive range of housing options to address different customer requirements. Customers are assured of industry-leading ultra-high-density connectivity when combined with EDGE8 modules, panels, harnesses, trunks, and patch cables. The mounting and

removal of trunks is a simple, quick, and tool-less operation enabling rapid deployment of high-fibre-count trunks for faster moves, adds, and changes.

Why nominee should win

- A culture of close collaboration with customers to solve tough technology challenges enables Corning to develop breakthrough optical fibre products and solutions that address enterprise needs of today, while being future-proofed.
- First to market with a modular, pre-terminated optical cabling system featuring a Base-8 cabling design.
- Continuous innovations in network performance monitoring and housing/module options for even greater flexibility in higher speed deployments.
- Provides a simple migration path to higher speed technology adoption with 100% fibre utilisation for 40G, 100G and 400G speeds.
- A 40G port disaggregation provides a cost-saving approach now for 10G deployments, while being future-ready for 40G.