

Making the grade with data centre interconnects



By **Danny Sleiman**

Solutions manager for high-speed and wireless networks, EXFO

It's no news that the growth of AI is driving a massive surge in data centre infrastructure. As this architecture is rapidly deployed, the need for it to work first time – without disruptions, latency problems or other performance issues – is growing in tandem.

Having readily available tools to test and monitor data centre interconnects (DCIs) from the moment they are rolled out is essential in this environment, says Danny Sleiman, solutions manager for high-speed and wireless networks at EXFO, a global leader in test, monitoring and analytics solutions for communications networks.

Sleiman explains that AI is leading to stricter SLAs as more reliable, lower-latency interconnections are needed between providers' data centres. These interconnections support the transition from data storage towards a higher proportion of data processing, for which downtime is not an option.

EXFO offers testing and performance monitoring across the entire DCI lifecycle, from building and activating interconnects to ongoing operations and maintenance. "We support testing at every stage, partnering with network operators from initial deployment through long-term operation," says Sleiman.

Enabling high-capacity DCI networks

Coherent optics play a key role in DCI environments, enabling the high capacity, extended reach and spectral efficiency required to support growing traffic demands driven by AI and cloud workloads. As DCI networks scale, validating their ongoing performance and ensuring operational readiness becomes essential.

As part of its offering, EXFO provides advanced testing for coherent optics supporting transceiver standards such as 100ZR, 400ZR and 800ZR, which are increasingly deployed to enable higher-capacity interconnects.

The company also offers remote fibre testing and monitoring through a cloud-native architecture with open APIs.

One trend EXFO is closely observing is the growing demand for testing against specific performance metrics, as well as supporting a broader range of DCI network owners. Beyond traditional telcos, hyperscalers, utilities and enterprises in a range of other sectors are increasingly deploying and operating their own interconnect infrastructure – each with unique testing requirements.

For instance, financial institutions may prioritise ultra-low latency to support high-frequency trading, while media companies may place more emphasis on higher bandwidth for video delivery.

"Hyperscalers, data centre providers and enterprises are now asking for specific requirements, and no two are the same," says Sleiman. "The challenge is keeping pace with rapidly evolving technologies while ensuring test solutions remain flexible and can adapt seamlessly without forcing operators into costly equipment upgrades."

Adapting to an evolving landscape

As DCI technologies continue to evolve, the pace of change is accelerating faster than ever. For EXFO, this evolution is not about reacting to challenges but about ensuring that emerging technologies can be deployed and operated with confidence from day one.

"There are many technology shifts happening in parallel," says Sleiman. "Our role is to help operators validate performance and maintain operational stability as technologies are deployed."

To support this, EXFO has focused on developing flexible test platforms designed to adapt as technologies evolve. "Much of what

we've done in recent years has been about building solutions that can scale to higher rates – such as 400G, 800G and beyond – through software updates, without requiring operators to invest in costly hardware replacements," says Sleiman.

In tandem, EXFO continues to drive innovation in fibre-optic testing as new technologies emerge. One example is hollow-core fibre, which represents a fundamental shift in fibre design and transmission characteristics to support lower latency and improved signal performance over longer distances.

"As with any new fibre technology, it's essential to verify that performance meets expectations to realise the intended operational and business benefits," says Sleiman. "This is where deep expertise in fibre optics really matters."

Complementing these capabilities is EXFO Exchange, a cloud-based platform that provides centralised access to test results and real-time visibility across the network-testing ecosystem.

"EXFO has historically been a reference point when it comes to optical testing," says Sleiman. "We leverage that expertise to meet the evolving needs of the industry."

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