

# Testing fibre and data centre interconnects at scale



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## What are the key drivers shaping the next phase of fibre expansion for AI, cloud and data centre infrastructure?

What's driving the fibre market right now is everything that revolves around AI, including data centres and data centre interconnects [DCIs]. This is shifting the focus toward prioritising low-latency and highly resilient fibre routes, driven by hyperscaler and AI demand.

Across the ecosystem, players of all sizes are evolving how they deploy and interconnect their facilities, with compute workloads increasingly distributed across multiple sites rather than concentrated in single locations, reflecting the rise of 'scale-across' architectures. This, in turn, raises the importance of how metro and longhaul networks are integrated to create large-scale national or international fibre fabrics.

As all this evolves, the industry is putting a lot of attention not just into planning fibre networks for today, but also for being 400G- and 800G-ready and beyond, in the knowledge that their needs will be exponential. They are also introducing more automation into networks from deployment to operations to help manage this growing scale and complexity.

## What are the main hurdles hyperscalers and operators face when scaling fibre networks to support this growth?

A key challenge is fibre availability and the rapid increase in fibre count per deployment. At scale, traditional rollout and testing approaches quickly break down, with what were once manageable manual steps becoming sources of delay, inconsistency and error.

This is driving a broader shift towards automation and digitisation across the full lifecycle, from deployment through to validation and operation. EXFO has been focusing on this evolution for some time, particularly on bringing greater intelligence and automation into testing.

Also, testing must evolve in speed and adaptability as fibre types like hollow-core and multi-core fibre diversify, and as data rates accelerate to 800G and beyond.

Increasingly, the industry is also recognising that testing cannot remain a standalone, technician-driven activity. It needs to be embedded into automated workflows and, in some cases, partially robotised so that it becomes more continuous and scalable, and less dependent on manual intervention.

## How is EXFO addressing these challenges with its testing, monitoring and analytics tools?

We've focused for a long time on automation and precision in our instruments. Increasingly, customers are looking to expand this approach as the industry accelerates, particularly as fibre-availability constraints and rising fibre counts make it difficult to rely on traditional methods at scale.

The next level involves integrating testing into broader automated workflows, which is what our cloud-hosted EXFO Exchange platform enables. We are also seeing early adoption of tools for more advanced remote and automated test execution, whereby processes can be controlled and orchestrated without direct intervention from technicians on-site. While still primarily driven by early adopters, the take-up of these is gaining momentum.

## Which recent developments at EXFO are helping address the demands of AI-driven data centre growth?

We recently launched native 24-fibre-capable testers, bringing a higher level of automation at the instrument level – and we see strong potential for adoption in DCI and intra-DC applications.

We're also seeing growing demand around multi-core and hollow-core fibre testing, driven by the need for dedicated test capabilities, including our hollow-core fibre OTDR [optical time domain reflectometer] test kit.

At the same time, ever-increasing network transmission speeds are driving demand for evolutive testers. Our 400G testing products can be upgraded to 800G through a simple software update, helping customers protect their investments.

## What are the key factors for ensuring that fibre networks remain reliable, resilient and ready for upgrades?

I would say there's a two-step process for that. A basic first step is making sure you build the network right by testing what you construct to ensure it's up to spec.

The second step is to keep eyes on what's happening on the network after it is built to maintain quality over time. That's what our systems do, providing continuous insight into fibre assets and allowing customers to understand what is happening on the network in real time, with increasing levels of automation supporting that visibility and enabling proactive maintenance.

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