

# Inside Networks

## Separating fact from fiction

DEBUNKING THE  
BIGGEST MYTHS  
ABOUT DATA CENTRES

## Joined up thinking

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AND FUTURE READY  
INTELLIGENT BUILDING  
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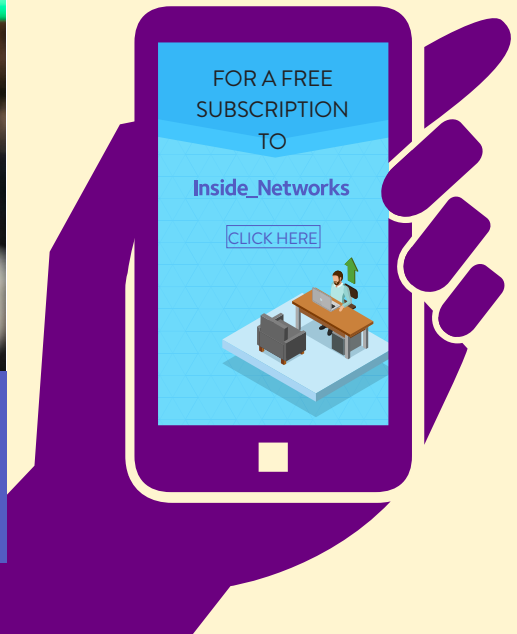
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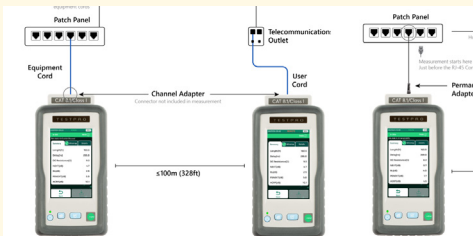
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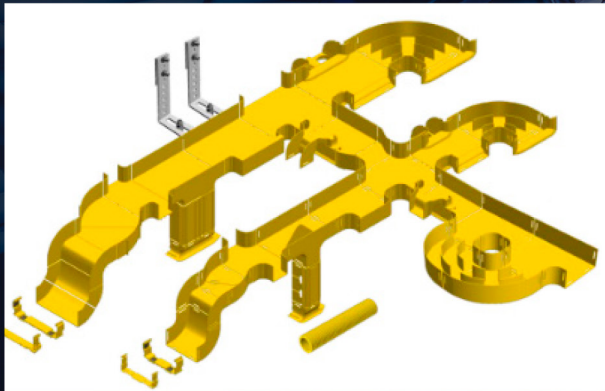
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# Moment of truth

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Data centres have become burdened by a mix of myth and misunderstanding. Within the mainstream media they are usually portrayed as windowless buildings that consume enormous amounts of electricity, strain local power grids and compete with communities for water during drought conditions.

Of course, those of us working in this industry know different and understand fully how data centres underpin everyday services, create skilled jobs, expand tax bases and form critical national infrastructure. That's not to say everything is perfect and there's certainly more to do.

While scrutiny is healthy, debate should be based on verified facts rather than assumption. To that end, in this month's Question Time we've asked a specially selected panel of industry experts to identify the biggest myths about data centres that need to be debunked, and why doing so could help shape public opinion about the positive role they play.

As AI reshapes the physical layer of enterprise and data centre infrastructure, we also take an in-depth look at what's happening in the world of connectors and connectivity. Panduit's Hans Obermillacher examines the role of connectors and connectivity and Mike Boisseau of Siemon explains why connectors are often overlooked and why they shouldn't be.

The importance of testing and test equipment should never be underestimated and our special feature on this subject contains three excellent articles. First up, Steve Cowles of AEM Precision Cable Test outlines the keys to the successful testing of installed copper and optical fibre cabling. Steve's followed by Julio Petrovitch of NetAlly, who explains best practices in PoE implementation and testing, while Nick Taylor of Networks Centre looks at MPO testing to BS EN 50174-4.

I hope you enjoy this issue of Inside\_Networks and if you'd like to comment on any of these subjects, or anything else, I'd be delighted to hear from you.

**Rob Shepherd**

Editor





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MADE TO CONNECT



## University of Glasgow research centre sets out to build cognitive cities of the future

A new research centre based at the University of Glasgow is setting out to develop the cognitive cities of the future, which will revolutionise urban life. The Centre for Integrated Sensing and Communication Enabling Cognitive Cities (ISAC<sup>3</sup>) aims to harness the vast amounts of data that will be gathered by 6G communications technologies to create cities which are healthier, safer and more sustainable for residents.

Unlike the current generation of smart cities, which provide real-time data on city systems, cognitive cities will harness the power of AI to analyse data collected by advanced sensors placed in various locations, as well as through peoples' mobile devices. This will enable city systems to become predictive rather than reactive.

The data gathered and processed by cognitive city systems will give urban spaces a level of sensory ability akin to a living organism, where sensing, communications and action can all act in parallel to respond to problems. New digital technologies driven by complex algorithms will help city decisionmakers identify and prevent common urban problems like gridlock, poor air quality or failing infrastructure, before they happen. Meanwhile, data gathered by next generation mobile devices about their users' wellbeing could help identify the early stages of serious health problems and direct them towards medical assistance to prevent worsening of their condition.

ISAC<sup>3</sup> unites the University of Glasgow's experts in engineering, computing science, cybersecurity, public health, innovation, business, social science and urban planning under a single banner. They will work with industry and academic partners, local and national governments and civic partners to establish a roadmap for the development of cognitive cities and develop research projects which can be translated into real world applications.

Qammer H Abbasi, founding director of ISAC<sup>3</sup> and professor at the University of Glasgow's James Watt School of Engineering, brings extensive experience in next generation

communications, integrated sensing and interdisciplinary research and policy leadership. He said, 'Cities around the world are facing a series of challenges including population growth, the effects of climate change, cybersecurity threats and the urgent need for decarbonisation. Next generation technologies like real-time data collection, advanced communications, quantum secured infrastructure, cyber physical systems and AI-driven analytics will provide the tools required to turn urban spaces into cognitive cities.'

In ISAC<sup>3</sup>'s first year, researchers will host workshops and webinars bringing together international leaders in integrated sensing, communication and computing to develop a deployment roadmap for prototype technologies. A key focus for the roadmap will be balancing the development of innovative systems with robust protection for the data collected from city sensors and mobile devices.



## Industry leaders launch North East Data Centre Hub to strengthen regional supply chain

The North East Data Centre Hub has been founded by companies including RED Engineering Design, Cleveland Cable Company, CMP Products, Durata and RWO Associates. The founding members share a clear ambition to build momentum by collaborating on the development of a strong local engineering, construction and digital supply chain to support data centre projects across the region and beyond.

The launch of the North East Data Centre Hub provides an opportunity

to shape the conversation locally and accelerate growth through regular engagement. The initiative aims to unlock the region's full potential as a leading data centre destination.

John McGee, group CEO at Durata, said, 'The North East Data Centre Hub provides an excellent opportunity for professionals in the sector to collaborate, share innovation and

exchange best practice. By strengthening local connections, we can amplify the north east's contribution to the wider UK and global data centre market.'



John McGee

## Nearly half of Brits feel more curious now than before AI as 'prompt culture' redefines how we learn

Research by Samsung has found that 48 per cent of people feel more curious than they did before AI became part of daily life. The research highlights how AI usage has broadened significantly. 46 per cent of Brits now use it to settle disputes or make important decisions, whilst 49 per cent say it inspires them to explore topics they wouldn't have otherwise considered.

With AI tools now accessible on mobile devices people already carry, curiosity no longer requires a trip to the library. Cooking and the human body top the list of what people most want to explore with AI, with personal health and travel planning

emerging as key areas of interest. The findings also show that just eight per cent are less curious since AI tools became mainstream, with Brits now spending almost two hours a week using AI to learn something new.

'For too long we've measured intelligence by what you can remember, but that world is changing,' said Annika Bizon, mobile experience vice president of product and marketing UK&I at Samsung. 'This shift is called prompt culture – a world where asking the right questions has become as valuable as knowing the right answer.'



Annika Bizon

## 83 per cent of data centre professionals think that AI demand will exceed capacity by 2027

83 per cent of senior leaders believe that AI workloads will exceed their current capacity within two years. That's according to a study from Salute based on research with 200 senior IT and data centre professionals across the US and UK.

Nearly half of respondents say AI and high performance computing are now the biggest drivers of new data centre projects, and 80 per cent expect to be running AI infrastructure at significant or full utilisation by 2027. As a result, 84 per cent say speed to market now directly influences their investment decisions.

But this acceleration is hitting

constraints. Power availability and grid access now top the list of barriers to AI expansion ahead of skills, funding and supply chain challenges. With electricity demand from data centres set to more than double by 2030, power strategy has become the critical determinant of AI capacity.

'Scaling AI isn't just about technology in the rack – it includes resilience of supply,' said Erich Sanchack,

CEO at Salute. 'The grid has become the new bottleneck. Operators that can turn constrained MW into dependable performance will own the future.'



Erich Sanchack

## DCA appoints Advisory Board to head new Advisory Council

Following the recent expansion of its Advisory Council, the Data Centre Alliance (DCA) has announced the formation of

a new Advisory Board. Liam Round has been appointed as chair and is joined by Jonathon Freeguard, Scott Cunningham, Astrid Wynne, Phil Beale and John Booth.

Collectively, they will ensure that the Advisory Council identifies and prioritises the most pressing issues affecting the data centre industry, delivering collaborative, industry-led initiatives.

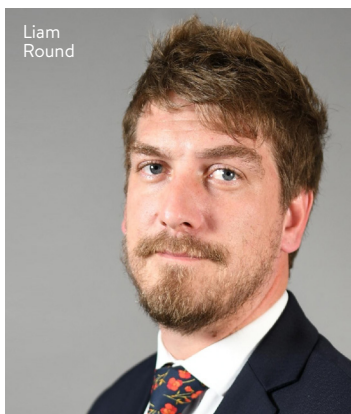
Liam Round said, 'I look forward to working with the DCA's leadership and partners to provide clear guidance, strong

governance and strategic focus as the industry navigates rapid change.'

The DCA has also teamed up with Clear

Decisions to create Regulatory Radar, an intelligence platform built specifically for the data centre industry. At a time when energy reform, planning policy, sustainability regulation and AI infrastructure strategy are reshaping the operating environment, Regulatory Radar provides data centre

owners, operators and infrastructure investors with a single, structured source of real-time insight across the UK and EU.

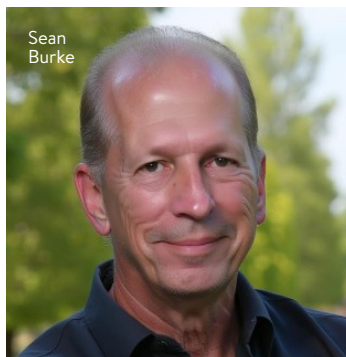


Liam Round

## Enteligent demonstrates how 800VDC power architecture significantly cuts data centre cost and energy waste

Enteligent has quantified how 800VDC power systems increase efficiency, improve thermal performance and reduce costs for next generation AI and graphics processing unit (GPU) data centres. It argues that traditional AC power paths cannot scale economically or reliably to support modern GPU clusters and why 800VDC, when paired with 50VDC server architectures, represents the inevitable evolution of data centre power.

High voltage DC (HVDC) systems overcome the constraints of traditional AC systems, which are limited by thermal management, conductor sizing and cumulative conversion losses, and often require multiple parallel runs, pushing up material costs and installation complexity. The copper and cabling implications of



Sean  
Burke

HVDC systems are also transformative, according to Enteligent's research, with fewer conductors and up to 50-80 per cent less copper required.

It claims that as data centres expand, an 800VDC system eliminates or consolidates many of the components in complex upstream AC infrastructure. This can result in \$4-\$8m capital expenditure savings per 10MW build and roughly 8-12 per cent reduction in annual energy related operational expenditure improvements.

'For hyperscale, GPU and AI-first data centres, HVDC power is the required foundation for the next decade of compute growth,' said Sean Burke, CEO at Enteligent. 'The significant benefits will be enormous.'

### NEWS IN BRIEF

The UK government has announced a major expansion of its national AI programme, unlocking free training opportunities designed to help up to 10 million people develop the digital capabilities needed to thrive in an AI-enabled economy by 2030.

Cybernews researchers analysed download data of the 100 most popular AI apps in 64 countries and found that Singapore, Chile and the UAE lead global AI adoption. The UK is the AI adoption leader among western economies.

Trane Technologies has entered into a definitive agreement to acquire LiquidStack. Building on Trane Technologies' minority investment in LiquidStack in 2023, this acquisition enhances Trane Technologies' data centre thermal management solutions and will scale LiquidStack's technology globally.

Vertiv has signed a framework collaboration agreement with the University of Bologna. The five-year agreement establishes a broad collaboration focused on knowledge development, skills advancement and territorial impact.

# Enterprise networking

Hi Rob

The repatriation of data back into private cloud is already starting to happen and this trend is expected to accelerate through 2026 as privacy and regulatory requirements tighten.

Geopolitical pressures along with unexpected expenses, strict compliance requirements and the need for greater control and security are pushing many organisations to rethink their cloud strategies – rediscovering the long-term value of the private data centre. According to Private Cloud Outlook 2025, a Broadcom commissioned report, 69 per cent of organisations are considering bringing workloads back on-premises and one-third have already begun.

As we all know, public cloud adoption promised agility and cost efficiency. Today, however, many companies are finding the reality more complex. Now organisations are increasingly maintaining critical data on-premise or within regional infrastructure, creating an integrated enterprise network architecture optimised for these local data centres. Networking solutions must ensure secure, high performance connectivity across sites, supporting compliance and efficient data access.

This shift is not a return to the past, however, but a strategic realignment driven by three core needs:

## • Compliance and data sovereignty

Since Brexit, the focus has shifted towards navigating a complex and evolving regulatory landscape rather than simple alignment with a single, specific set of rules. This includes managing new areas of compliance such as AI regulation,

cybersecurity laws and environmental, social and governance (ESG) reporting requirements.

In addition, regulations such as General Data Protection Regulation (GDPR), the Health Insurance Portability and Accountability Act (HIPAA) and the Payment Card Industry Data Security Standard (PCI DSS) have become stricter, ensuring data sovereignty is now a business critical requirement.

Public cloud environments can make it difficult to know exactly where data resides and who has access, whereas a private data centre allows organisations to control data location and access, simplify audits, reduce compliance risks and strengthen customer trust.

In PwC's Global Compliance Survey 2025, only seven per cent of respondents currently consider themselves to be leading in compliance, yet 38 per cent aim to be leading within three years – confirming how compliance is driving architectural choices.

## • Control and security

Certain applications demand the performance and consistency that only dedicated infrastructure can provide – financial trading, real-time IoT, industrial automation and high performance computing. When performance and consistency are the priority, private cloud environments offer predictable performance and low latency, complete control over security policies, full visibility across the entire infrastructure and rapid responses to threats.

Even as public cloud security improves,

# is being reshaped

the shared responsibility model means organisations still carry ultimate accountability for protecting their data.

- **Cost transparency**

Hybrid strategies are growing among organisations in the UK and Ireland – up from 58 per cent in 2022 to 68 per cent in 2025 – and one of the reasons is cost.

Public cloud services often introduce hidden or variable costs – data egress, long-term storage, application programming interface (API) usage and add-on features required to match on-premises capabilities. These costs can scale quickly and unpredictably. Although private data centres require upfront investment, they often deliver a lower total cost of ownership for stable workloads along with full cost visibility and no vendor lock-in.

At the heart of successful cloud repatriation is a modern, intelligent and secure network. When the data centre returns inside the enterprise perimeter, the network becomes the backbone that ensures performance, resilience and security.

To ensure the best possible compliance, a customer should look for a network solution that supports hyperconverged infrastructure as well as a traditional tiered architecture. This ensures that if they choose full public, private cloud or a hybrid solution somewhere between the two, they will have infrastructure capable of migration in either direction, as their requirements evolve. Not all platforms can handle this dual role – specialised, high performance solutions are essential.

Repatriating data and workloads does

not mean abandoning the cloud. It means adopting a balanced, flexible strategy – keeping what is critical on-premises, while leveraging the public cloud where it adds value. It is not a step back – it is the foundation for a future where businesses stay in control of their digital destiny.

**Chris Dyke**  
**Allied Telesis**

### Editor's comment

Compliance requirements and data sovereignty concerns are pushing critical workloads closer to home, where enterprises can clearly define where data lives, how it is processed and who can access it. For regulated industries in particular, on-premise infrastructure offers clarity and confidence that public cloud environments often struggle to guarantee across jurisdictions.

As Chris illustrates, control and security are also reinforcing this momentum. At the same time, predictable capital and operating costs are replacing variable cloud spend, making budgeting simpler. As cloud pricing and complexity continue to rise, private infrastructure is increasingly viewed not as a step backward, but as a strategic, long-term advantage.



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# Fact finding mission

As data centres have entered the mainstream consciousness, they have become burdened with misunderstanding. [Inside\\_Networks](#) has assembled a panel of industry experts to identify the biggest myths about data centres that need to be debunked

▶ Once the quiet backbone of the digital economy, data centres are now routinely portrayed as shadowy energy hogs, environmental villains or faceless machines draining communities of resources. Such narratives make for easy headlines but they rarely stand up to scrutiny.

Many of the myths circulating today are built on half-truths, oversimplification or selective statistics stripped of context. These misconceptions are not only shared on social media but are often amplified by

commentators, campaigners and even policymakers who should know better. The result is a distorted public debate that confuses correlation with causation and ignores rapid advances in efficiency and sustainability.

Conversations about data centres must be grounded in evidence rather than assumption and in facts rather than fear. As such, Inside\_Networks has brought together a panel of industry experts to name their number one myth that needs to be busted.



**WHAT'S THE BIGGEST MYTH ABOUT DATA CENTRES THAT NEEDS TO BE DEBUNKED AND WHY DO YOU BELIEVE IT PERSISTS? HOW DOES THIS MISCONCEPTION SHAPE PUBLIC OPINION, POLICY DECISIONS OR BUSINESS STRATEGIES AROUND DIGITAL INFRASTRUCTURE AND WHAT IMPACT COULD DISPELLING THIS MYTH HAVE ON HOW DATA CENTRES ARE DESIGNED, OPERATED AND PERCEIVED BY WIDER SOCIETY?**

## EMMA FRYER

DIRECTOR OF PUBLIC POLICY EUROPE AT CYRUSONE

Large, boxy, poorly understood, hidden behind security fences and, if you believe what you read, spreading fast enough to cover the entire Earth, data centres attract myths like jam attracts wasps. We have plenty to choose from – the water myth, the energy myth, the cat video myth, the carbon myth, the unlimited growth myth and the list goes on. However, the myth I would like to single out for special attention is the ‘data centres have nothing to do with me’ myth.

When we researched public attitudes to data centres in 2024, there were two very striking findings – one good, one bad. The first was that 93 per cent of people were either neutral or positive about data centres, which is a far cry from the impression given by mainstream media. The second was that barely a third of adults in the UK understand what they do. Around two thirds of people were unaware that the digital services they use all day, every day, are underpinned by industrial scale infrastructure.

The data centre sector has not emerged fully formed like Athene from the head of Zeus, but evolved quietly, hidden away on ex-industrial sites and trading estates over the last three decades. Having been largely business facing, we have not needed to justify our existence publicly.

So now we are in the public eye it’s unsurprising that people are wondering

what we do. And the low profile of the sector, plus our ability to keep things running without conspicuous failure, means that people have simply not spotted the extent to which data centres underpin their daily lives.

If everyone thinks the internet runs by magic and the cloud is, well, a cloud, then it’s hard to see the point of data centres. The data centres have nothing to do with me myth is pernicious because lack of public understanding exposes us to other myths and makes us an easy target for misinformation because there is no public debate. Why defend something that doesn’t do anything useful?

In my view, broad recognition that data centres actually have a lot to do with me could be transformational. Building new capacity would then make sense, and the internet might finally get the utility status it deserves.



**‘THE DATA CENTRES HAVE NOTHING TO DO WITH ME MYTH IS PERNICIOUS BECAUSE LACK OF PUBLIC UNDERSTANDING EXPOSES US TO OTHER MYTHS AND MAKES US AN EASY TARGET FOR MISINFORMATION BECAUSE THERE IS NO PUBLIC DEBATE. WHY DEFEND SOMETHING THAT DOESN’T DO ANYTHING USEFUL?’**

## MATTHEW BAYNES

VP SECURE POWER & DATA CENTRES AT SCHNEIDER ELECTRIC UK&I

Data centres are now fixtures in national and mainstream media, drawing attention from policymakers, regulators and investors. They are no longer optional infrastructure but are foundational, being critical to both economic growth and digital progress. They are also central to the UK's ambitions for AI.

What is still not widely understood is just how fundamental data centres are to everyday life. Every online interaction depends on the secure, resilient infrastructure they provide. This is the reason the UK government has formally designated data centres as critical national infrastructure, noting that they underpin 'almost all economic activity and innovation'.

Despite this, data centres are often misunderstood, particularly when it comes to sustainability. A persistent myth is that they are inherently wasteful, consuming vast amounts of power with little consideration for environmental impact. While data centres are undeniably energy intensive, the sector has moved to address this challenge. Planning frameworks increasingly steer development towards brownfield or ex-industrial sites with existing power connections, reducing land use pressure and supporting energy generation alongside efficient integration with the grid.

Water use is another frequent concern. Headlines often cite extreme examples, but these do not reflect the norm. This is also reflected in techUK's survey looking

at data centre operators in England, which found 64 per cent of data centres use less than 10,000m<sup>3</sup> of water per year, which is comparable to a single, Premier League football club. In addition, 51 per cent of operators now use waterless cooling

systems, relying on closed loop or air based technologies.

The gap between the myth and reality matters. While public opinion does not directly set policy, the understanding does influence planning decisions, investment confidence and the pace of innovation. Data centres support high value jobs, enable digital services across the country and play an active

role in the UK's net-zero and AI ambitions.

Many of the myths persist simply because the sector has not always engaged or communicated with transparency. If data centres are to be recognised as the critical infrastructure they truly are, greater engagement with local and public authorities is essential. Progress, as ever, starts with understanding.



**'DATA CENTRES ARE OFTEN MISUNDERSTOOD, PARTICULARLY WHEN IT COMES TO SUSTAINABILITY. A PERSISTENT MYTH IS THAT THEY ARE INHERENTLY WASTEFUL, CONSUMING VAST AMOUNTS OF POWER WITH LITTLE CONSIDERATION FOR ENVIRONMENTAL IMPACT?'**

## JOHN BOOTH

MANAGING DIRECTOR AT CARBON3IT

The biggest myth is that data centres are isolated energy hungry buildings that are unrelated to normal life. In reality data centres are the foundation of our daily lives, at least in the first world, supporting almost everything from traffic management to finance and banking to online shopping. The planning, delivery and operation of data centres also contributes over £5bn to the UK economy and our expertise is exported abroad.

Why does this myth persist? It can be pinpointed to big media, which on a regular basis publishes data centre scare stories that are usually related to energy or water use (mostly mis-use). These appear to originate from various environmental pressure groups or power/water utility companies to deflect from gross mismanagement of their infrastructure assets for the last 40 years. These stories usually cite some made up or spurious statistic that they extrapolate out to throw shade on the sector.

That said, the data centre sector hasn't done itself any favours by the secretive nature of land acquisition, selected statistics used in planning applications, a lack of opportunities for locals, scant disregard for the environment and a serious lack of transparency in reporting energy and environmental data. All the above shape the national and local discourse around data centres.

Data centres are now classed as critical

national infrastructure in the UK. Although what this means exactly has not yet been specified in any great detail, we now have an excellent opportunity to dispel the myth once and for all.

I expect that the impending National Policy Statement from the Department for Science, Innovation and Technology (DSIT) will issue detailed guidance for data

centre planning applications. It could specify the use of sustainable construction materials, on-site/off-site renewable energy use, use of the EN 50600 series, mandatory heat reuse in the Department for Energy Security and Net Zero (DESNZ) Heat Zones etc. These could

be coupled with the AI Opportunities programme, where certain locations may benefit from subsidised energy, fast track planning, technical training funding and other benefits. It will throw some light on how data centres are designed, built and operated.

This is likely to be widely reported in the media and will no doubt create more discourse on the subject.



**'THE BIGGEST MYTH IS THAT DATA CENTRES ARE ISOLATED ENERGY HUNGRY BUILDINGS THAT ARE UNRELATED TO NORMAL LIFE.'**

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## MARK ACTON

OWNER AND PRINCIPAL CONSULTANT AT ACTON CONSULTING

Currently, the biggest myth about data centres relates to water consumption in the UK. The problem is that the data regularly used is US based and we typically use very different cooling systems in Europe. In the US water consumption is a genuine problem as they love evaporative cooling – even in locations of water scarcity!

Since we design differently in Europe, in general our water usage is significantly less. This inaccuracy persists and muddies the water(!), especially when these figures are quoted by the likes of the BBC and UK based water companies trying to draw attention from their own woeful performance.

It would be interesting to know how much water companies lose in leaks versus true data centre consumption. A cynic might suggest that the water companies are looking for somebody else to blame and a lack of understanding about data centre cooling is allowing them to do so.

It is not correct to simply assume that water cooled data centres are evaporating water and therefore 'consuming' it. Traditional chilled water systems in both the UK and Europe with closed loops utilise very little water. Most of the data centres

in England's data centres use less water per year than a typical leisure centre, and nearly 90 per cent of sites either measure water use or deploy systems that do not require water for cooling.

Even if water usage were a real issue in Europe, golf courses consume more water than data centres and yet service far fewer people. If made to choose, would most of the population decide to close down golf courses, or the data centres that provide all the digital services that they consume?

If an AI tool utilising a data centre in the US had been used to create this article (it was not) the facility would probably be using significant amounts of water from sources that are not sustainable. However, had that AI data centre been based in the UK it would have been a different story with far less, if any, water usage involved.



**'TRADITIONAL CHILLED WATER SYSTEMS IN BOTH THE UK AND EUROPE WITH CLOSED LOOPS UTILISE VERY LITTLE WATER. MOST OF THE DATA CENTRES IN ENGLAND'S DATA CENTRES USE LESS WATER PER YEAR THAN A TYPICAL LEISURE CENTRE.'**

## NICOLA HAYES

CHIEF MARKETING OFFICER AT PLATFORM MARKETS GROUP

One of the biggest myths across the global data centre sector stems from the exclusive focus on AI data centres we've witnessed over the past five years. The myth being that only mega hyperscale data centres are needed to power the AI era.

Enterprise data centres have been overlooked. This is largely because the AI narrative has been shaped around hyperscale cloud and purpose built mega facilities, rather than the realities of how most enterprises deploy and operate technology.

As this follows on from the misconception that the public cloud would make these facilities obsolete, enterprise strategy has been shaped by this thinking for over a decade. As a result, these facilities have been treated as legacy cost centres rather than strategic platforms.

In reality, not all workloads are cloud native or economically viable in hyperscale environments. AI inference, latency sensitive applications and high density compute can actually perform better and more cost effectively in enterprise or hybrid data centre environments.

By dispelling this myth, and by rethinking the enterprise data centre as long-term digital infrastructure, we will start to see more balanced hybrid architectures,

better capital planning and greater investor confidence in this crucial asset class. Bringing enterprise back to the narrative would also support more realistic AI deployment strategies, reduce over-reliance on hyperscalers and maybe go some way to minimising the continued

negative PR the sector has witnessed recently.

And the numbers back this up. Conservative estimates predict the value of the enterprise data centre market will grow at eight per cent CAGR between now and 2032 and, depending on which forecasts you use, this means that this part of the industry still represents between 20-40 per cent of the overall value of the sector.

But this needs investment. Not short-term, headline

led capital but patient, infrastructure aware investment. For the right investor, enterprise data centres offer stable demand, embedded customers and defensible value. Let's hope 2026 is the year the enterprise data centre takes centre stage again!



**'AI INFERENCE, LATENCY SENSITIVE APPLICATIONS AND HIGH DENSITY COMPUTE CAN ACTUALLY PERFORM BETTER AND MORE COST EFFECTIVELY IN ENTERPRISE OR HYBRID DATA CENTRE ENVIRONMENTS.'**

## JON LABAN

FREELANCE CREATIVE SYSTEMS THINKER

Methinks the biggest data centre facility myth is hidden in the name 'data centre'. Have you ever pondered exactly why we call these facilities data centres? Perhaps because they store data? Yes, these facilities do store data but the data storage subsystem of the facility is less than one fifth of the total function of the facility both in terms of energy use and equipment footprint.

The main function of the facility is data processing, which accounts for more than 80 per cent of the total function both in terms of energy use and equipment footprint, as well as financial costs. I would recommend listening to Richard Feynman, who is probably the most famous theoretical physicist after Einstein, talking on YouTube about data processing facilities and the utter stupidity of calling them data centres.

Words, especially names, are important because they have the ability to close down minds and prevent big complex systems thinking. Engineers are particularly susceptible to this narrow mindset thinking because the engineering education system in the west teaches reductionism. What's needed today are people that understand big complex systems and are educated in systems dynamics. To find out more I suggest reading the book Thinking in



Systems by Donella Meadows.

We need to revisit these so called 'what the fuck (WTF)' facilities with fresh and open minds and apply systems dynamics to understand the non-linear behaviour of complex systems using concepts like feedback loops, stocks and flows. The first realisation is that these WTF facilities are not stand alone isolated closed systems and, as such, cannot be

considered in isolation.

During this decade, and because of the laws of physics, we shall see a shift away from air cooling towards liquid heat transfer systems. The low entropy of liquid heat transfer systems will give birth to heat harvesting and heat reuse, and this will add energy centre as a function for the WTF facility. When this becomes the norm what name will we give them?

**'I WOULD RECOMMEND LISTENING TO RICHARD FEYNMAN, WHO IS PROBABLY THE MOST FAMOUS THEORETICAL PHYSICIST AFTER EINSTEIN, TALKING ON YOUTUBE ABOUT DATA PROCESSING FACILITIES AND THE UTTER STUPIDITY OF CALLING THEM DATA CENTRES.'**

## PAUL MELLON

OPERATIONS DIRECTOR AT STELLIUM DATACENTERS

The biggest myth about data centres is that they are inherently bad for the environment and always waste massive amounts of energy – even though the same can be said about cars, aircraft, ships and many parts of the modern living world.

The fact of the matter is that we, as an industry, have quietly achieved a great deal over the last 20 years, making significant improvements to data centre energy efficiency and sustainability. Take the humble IT rack, which increased from a power density of 1.5kW in 2020 to over 200kW in 2025. In terms of cooling, in 2020 it took at best 1.5-3kW to support 1.5kW of IT load. In 2025 we could cool a 200kW rack with just 10-20kW of cooling – a meteoric advancement.

Of course, as far as the public is concerned, this goes unnoticed. As does our industry's collective success in enabling the trading of highly inefficient in-house computer rooms and computer centres for the super energy efficient cloud. By and large, the public remains blissfully unaware of the immense value and contribution data centres make to modern society – processing and facilitating their communication, financial transactions, shopping, healthcare, education, social media, TV and audio entertainment, and much more.

Yet, whenever a new data centre planning application surfaces in the press,

the usual negative stories appear around these mysterious 'good for nothing' energy guzzling behemoths. These stories are usually accompanied by quotes from suitably outraged members of the local community.

The very nature of the data centre is the root cause of it being misunderstood. After all, we are expected by our customers

to be a model of discretion, keeping their data safe and secure, with systems running come hell or highwater. But we don't shout about it.

We have achieved a great deal without the need to engage in a charm offensive to alter public opinion. However, regarding government policy makers, town

planners et al, the data centre industry should do more to amplify our credentials, as befitting designated critical national infrastructure, as pillars of the digital economy and pivotal to delivering the promise of AI.

We must be adequately and fairly represented, allowing a level playing field for us to deliver what is expected.



**'THE BIGGEST MYTH ABOUT DATA CENTRES IS THAT THEY ARE INHERENTLY BAD FOR THE ENVIRONMENT AND ALWAYS WASTE MASSIVE AMOUNTS OF ENERGY'**

# Excel Enbeam Fibre – performance you can depend on

In a market where bandwidth demands continue to accelerate and network reliability is non-negotiable, the **Enbeam Fibre** range stands out as a complete, high performance solution that is engineered for data centres, campuses and enterprise environments

From bulk cable to high density connectivity and pre terminated assemblies, Excel's **Enbeam Fibre** range is designed to deliver long-term reliability, exceptional performance and total peace of mind.

Space is at a premium in today's high density environments and Excel's connectivity solutions are engineered to maximise every millimetre. Low loss LC and MPO, as well as SN options, Uniboost designs and compact hardware, deliver

the density and efficiency required in modern racks and cabinets, without compromising performance or manageability.

Customers also benefit from deep technical knowledge, responsive support and the reassurance of the Excel 25 year warranty when systems are installed by accredited partners. With Test Trace QR codes on product labels, users can instantly access batch specific test data, reinforcing transparency and confidence in every installation.



## The mark of quality

At the heart of the **Enbeam portfolio** is a commitment to quality. Every component is built to exacting standards, with options including all dielectric, Construction Products Regulation (CPR) compliant, bend insensitive designs, B2ca rated cables and best in class connector performance.

High fibre core counts and support for current and emerging speeds – 40Gb/s, 100Gb/s, 400Gb/s and the roadmap to 800Gb/s and 1.6Tb/s – ensure that networks built on Excel fibre are ready for whatever comes next.

Excel also offers a comprehensive range of **FTTx and blown fibre solutions**, giving installers and end users the flexibility to design networks that scale effortlessly. The **Elevate brand**, launched in 2025, has been designed and built to provide a comprehensive data centre solution.

## Config Services

One of the biggest growth areas in fibre deployment is pre termination. Excel's **Config Services** pre-terminated solutions are designed to make installation faster, cleaner and more

# Performance

# excel

without compromise.

negotiable, Excel Networking Solutions' solutions for the needs of modern data centres,



Mayflex's **Cut Cable Service** provides made to order lengths, reducing waste and simplifying logistics. The **ReelCycle** service offers an environmentally conscious way to return and reuse cable drums – an initiative that remains underused but delivers clear sustainability and cost benefits.

predictable.

Assemblies are manufactured at the Mayflex HQ, in a controlled environment using the latest test equipment, ensuring factory terminated quality every time. Each assembly is made to measure, fully tested before dispatch and supplied in plastic free packaging.

Crucially, pre terminated solutions don't require highly skilled fibre engineers and expensive equipment on-site – reducing costs and installation time. In many cases, the savings achieved on-site far outweigh the added cost of the assemblies themselves.

### Everything you need

Supporting this is [Excel's online configurator](#), which allows users to build the exact specification required, including the new MPO configuration facility.

For projects requiring additional flexibility,

Buying Excel through Mayflex brings further advantages including competitive pricing, huge stock availability and free next day delivery to the UK mainland.

### Features and benefits

Excel **Enbeam Fibre** is more than a product range – it's a complete, end to end solution designed to deliver performance, reliability and future proof scalability. Whether you're building a new data hall, upgrading a campus backbone or deploying high density connectivity at the edge, Excel provides the tools, expertise and assurance to do it right the first time.

For more information about the Enbeam Fibre range [CLICK HERE](#), to email the Mayflex sales team [CLICK HERE](#) or call 0800 75 75 65 to discuss your fibre requirements.

[www.excel-networking.com](http://www.excel-networking.com)

# Smart thinking

Mike Boisseau of Siemon explains why connectors are often the overlooked link in intelligent building connectivity and why this shouldn't be the case

▶ Modern commercial buildings are increasingly defined not by their walls or their floorplans, but by the networks running through them. They depend on structured cabling to support a rapidly expanding range of applications, from Wi-Fi and security cameras to access control, audiovisual (AV), lighting systems and building sensors. The truth is that none of it works without the physical layer beneath it. If the cabling infrastructure is inconsistent, everything above it becomes harder to scale, harder to maintain and more expensive to operate.

## SHIFT WORK

Over the past decade, I have seen a fundamental shift in building network

design. Long gone are the days where a network connection was reserved for the telecommunications room and the user workstation.

Today, connectivity has proliferated throughout the smart building, and increasingly beyond it. That takes structured cabling into harsher environments including industrial spaces and hot ambient conditions. In many cases, we are seeing direct to end device deployments, where cabling is terminated to RJ-45 plugs rather than traditional outlet architectures.

Structured cabling is no longer just supporting a workstation and a phone. It supports systems that building operations increasingly depend on for availability,



safety and performance. Performance is about consistency, resilience and predictable operation over the long-term.

Power over Ethernet (PoE) has accelerated this shift. As PoE adoption grows and power levels increase, connectors are being asked to do more than provide a clean data signal path. They are also part of the power delivery system – and that has implications for long-term reliability that are often underestimated.

### AHEAD OF THE GAME

Long-term reliability does not happen by accident. It depends on connector design excellence, material integrity, manufacturing consistency and making the right deployment choices at the edge, especially once PoE becomes part of the equation.

One of the most important realities of PoE is what happens when a connection is unmated under load. Disconnect events create electrical discharge at the contact interface, which can degrade plated surfaces over time. RJ-45 outlet and plug contacts are typically plated with precious metals such as gold or palladium. These metals are used because they are excellent conductors, but they are also susceptible to long-term wear and damage.

### GRAND DESIGNS

From a connector design standpoint, the goal is to control where discharge occurs when a connection is unmated under load.

**‘Long-term reliability does not happen by accident. It depends on connector design excellence, material integrity, manufacturing consistency and making the right deployment choices.’**

Ideally, arc activity should take place away from the primary contact zone responsible for long-term performance. In PoE-heavy environments, where devices may be disconnected and reconnected repeatedly, this becomes a key reliability factor. Specifiers should look for contact designs engineered to manage arc location and protect the wipe zone, because preserving plating integrity at the contact interface is critical to long-term performance.

Every termination represents a single point of risk in the cabling system, and any break in the system is a potential point of variability. We use the phrase ‘you are only as strong as your weakest link’, and in structured cabling, standards recognise this as well. That’s why they limit the number of connections allowed within a channel. Those limits exist because connectors are



not passive components from the perspectives of channel performance and reliability. They introduce change into the system, and they must be designed and manufactured to do so without compromising network reliability or performance.

### FAIL SAFE

In intelligent building deployments, the scale of the endpoint environment makes this more significant. A connector failure doesn't affect just a single user. It can affect wireless coverage, security visibility, access control reliability or building automation performance. The expectation is not that the cabling system works on day one, but that it continues to perform reliably as devices are added, replaced and upgraded over the life of the building.

Connector performance starts with material integrity, particularly at the contact interface. In PoE-heavy environments, plating stability over time becomes critical. As raw material costs rise, specifiers should focus less on baseline compliance and more on proven designs that protect contact performance over decades of service life.

Manufacturing discipline matters just as much as product design. It is one thing to engineer a connector that performs well once in controlled conditions but it is another to mass produce the same high performance connector repeatedly across global operations and do so sustainably. In deployments involving thousands of connections, consistent, repeatable performance based on product design and proven daily in the rigors of well controlled



manufacturing processes is an absolute requirement.

### CLOSE TO THE EDGE

Many of the most challenging connector decisions now happen at the edge. Endpoint devices increasingly have compact housings and recessed RJ-45 ports, leaving little margin for error around bend radius, strain relief and long-term mechanical stress at the point of connection.

In those environments, connector selection can easily become driven by what fits rather than what performs. For some endpoint devices, direct connect field terminated plugs may not always be the right fit or the best option for Category 6A support, particularly for common endpoints such as security cameras and wireless access points.

In many deployments, the better solution is to rethink where the termination happens. Using short patching architectures allows the horizontal cable to be terminated in a protected, accessible

location, with a short patch lead running into the end device. This can reduce strain at the port, maintain bend radius, simplify servicing and improve long-term reliability.

## OUT AND ABOUT

The need to protect the connection becomes even more pronounced when connectivity extends into harsher or outdoor environments. Outdoor cameras are a clear example, but external connectivity is now common in parking areas, perimeter access and campus environments. Rain, snow, heat, fog and humidity all accelerate the likelihood of degradation if connections are not properly protected.

In these environments, ruggedised connectivity becomes essential, not as a specialist solution but as a practical requirement. Outdoor rated glands, sealed housings and protected interfaces are necessary to prevent ingress and maintain long-term performance. Ruggedised connection systems should combine sealing, strain relief and a protected mating interface so the connector is not exposed directly to the environment.

## QUALITY STREET

The cable termination process itself is also critical. Historically, structured cabling relied heavily on field terminated outlets. Today, field terminated plugs are increasingly common because of the demand for direct to end device connectivity. Whether an outlet or a plug, termination consistency and quality are essential.

At scale, termination quality becomes a design issue as much as an installation issue. Managing cable untwist, maintaining conductor geometry and ensuring the conductor is positioned correctly into the

insulation displacement contact are all key elements of performance. Connector systems that preserve pair geometry to the point of termination and minimise untwist by design help reduce installer variability and deliver repeatable performance across thousands of terminations.

## BUILT TO LAST

The applications running over an intelligent building's infrastructure will change many times over, but the structured cabling system and its connection points remain the foundation. That is why connector selection needs to be treated as a design decision, not a commodity choice. The right connector system is one that protects the contact interface under PoE load, delivers repeatable termination performance at scale, and supports smarter deployment using short patching architectures and ruggedised sealed interfaces where space constraints or environmental exposure demand it. ■



### MIKE BOISSEAU

Mike Boisseau is director of product management at Siemon, focused on the company's smart building solutions. Based in Siemon's headquarters in Connecticut, he has been with Siemon for 19 years, helping customers create intelligent, connected and sustainable buildings.

## Elevate

As data centre teams accelerate consolidation and expansion projects, high density optical fibre has become a critical foundation for scalable, efficient infrastructure. Elevate's high density connectivity portfolio is engineered to support these demands with compact form factors, streamlined installation and consistent optical performance.

Elevate's very small form factor (VSFF) connector solution is powered by SENKO and uses SN and SN MT connector technology to deliver substantial density gains – supporting up to 3456 fibres in just 1U of rack space – while preserving clear labelling, front access ergonomics and a straightforward upgrade path. From spine-leaf architectures



to hyperscale patching fields, Elevate provides ultra-high density (UHD) with operational clarity.

Beyond the hardware, Elevate prioritises predictable deployment – modular panels, structured cable management and tray level guidance all contribute to faster installation and reduced day two complexity. Combined with a portfolio that spans fibre, racks, containment and intelligent power, Elevate offers a unified ecosystem for projects where efficiency, reliability and long-term scalability are essential.

Reach out to the Elevate team for more information on 0121 326 2471 or to send an email [CLICK HERE](#). [elevate.excel-networking.com](http://elevate.excel-networking.com)

## Comms Centre

When ultra-high density (UHD) connectivity first hit the market many years ago, lots of customers stated they'd never use it because unpatching with HD panels was difficult enough, especially if the latch keys for both rows are rotated the same way. Products like the XD Uniboot with an extended lever greatly reduce these issues.

Available from Comms Centre, the HUBER+SUHNER IANOS UHD 1U chassis has three separate levels, split into LH and RH sections, which can slide in-out independently, so even when using standard patch cords there is no issue getting to the latch. However, for fully



patched panels we'd still recommend using the XD Uniboot to cut down on the volume of cable exiting each side.

The HUBER+SUHNER IANOS range continues to expand beyond LC and MPO presentation, with options now available for SN and MDC very small form factor (VSFF) connectors, which triple density to 216 duplex circuits per 1U.

[CLICK HERE](#) to find out more, call 01634 291191 or to send an email [CLICK HERE](#). [www.commscentre.com](http://www.commscentre.com)

## Siemon

Siemon's In-Line Connector offers quick, reliable high performance field terminations for custom length direct connections to wireless access points, security cameras and other IP-based and power over Ethernet (PoE) enabled devices deployed in today's smart building networks.

Designed to address space constraints at device ports, it enables direct connect modular plug terminated link (MPTL) deployments where traditional high performance plug terminations are challenging. It does this while maintaining full Category 6A performance. Supporting 23-24AWG solid and 24-28AWG stranded cables across shielded and UTP channels, the In-Line



Connector integrates seamlessly into high performance horizontal cabling and facilitates cable transition from indoor to outdoor environments.

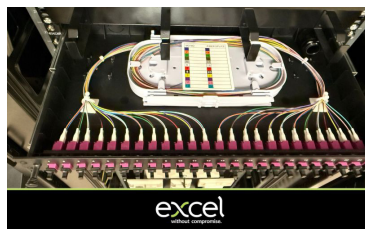
Engineered to withstand higher operating temperatures, the In-Line Connector incorporates PowerGUARD+ technology, delivering long-term performance and reliable support of data and PoE across the building and campus. It is a streamlined, installation ready solution for demanding smart building applications.

[CLICK HERE](#) to find out more.  
[www.siemon.com](http://www.siemon.com)

## Excel Networking Solutions

The Enbeam 24 way OM4 LC duplex patch panel (201 623) from Excel Networking Solutions delivers exceptional performance, reliability and ease of use for high density optical fibre installations. Engineered as a sliding drawer tray style housing, it supports direct termination or splicing of up to 48 fibres within just 1U of rack space, making it ideal for modern data centres and enterprise environments.

Manufactured from robust 2mm steel chassis with a heavy duty reinforced plastic tray and finished in durable black powder coat, the panel ensures long-term resilience. Pre-loaded LC duplex adaptors provide fast deployment, while



colour coded multimode adaptors simplify identification and maintenance.

With multiple rear cable entry points, included pigtailed and smooth ball bearing runners, the panel enhances installation efficiency and ongoing accessibility. Its compact footprint, high port density and OM4 multimode performance make it a powerful choice for organisations seeking scalable, future ready fibre connectivity.

[CLICK HERE](#) to find out more about the Enbeam 24 way OM4 LC duplex patch panel, which is in stock and ready for next day free delivery to the UK mainland.  
[www.excel-networking.com](http://www.excel-networking.com)

# Building on solid foundations

Panduit's Hans Obermillacher examines the role of connectors and connectivity in enterprise and data centre environments

**▶** The rapid acceleration of AI, high performance computing, edge processing and IoT adoption is reshaping the physical layer of enterprise and data centre infrastructure. While attention often focuses on graphics processing units (GPUs), switching silicon and optics, the foundational enabler of performance, scalability and reliability remains the structured connectivity system – optical fibre and copper cabling, high performance connectors, pathways, enclosures and intelligent management architecture.

## SUPPORT STRUCTURE

Across both enterprise campuses and hyperscale AI data centres, the transition to higher bandwidths, denser architectures and power aware infrastructure is forcing a re-evaluation of how connectivity is designed and deployed.

The shift is not simply about faster speeds. It is also about enabling sustainable, modular and operationally efficient environments capable of supporting 400Gb/s, 800Gb/s and emerging 1.6Tb/s networks while maintaining manageability and thermal stability.

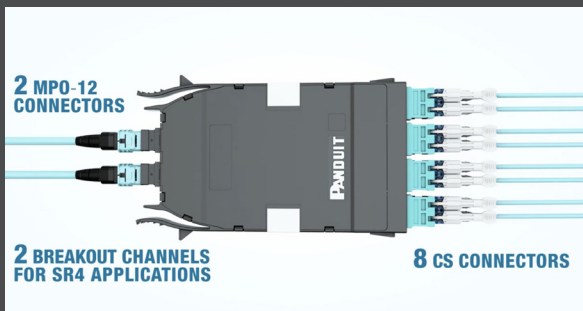
## FIBRE PROVIDER

AI training clusters and inference environments are driving unprecedented east-west traffic. Modern GPU-based servers no

longer rely on traditional duplex fibre links. Instead, they commonly deploy multi-fibre parallel optics using high density multi-fibre connectors terminated in modular cassette and panel systems.

AI GPU servers typically utilise eight fibre connections, while 800Gb/s channels operate over 16 fibres (eight duplex lanes). This represents at least a fourfold increase in fibre count compared to legacy duplex architectures, and in practical AI pod deployments overall fibre density can increase by up to eight times.

This escalation in fibre count places enormous demands on connectivity hardware. High density fibre trunks, precision terminated multi-fibre connectors and modular patching frames become essential to maintain order within increasingly constrained white space environments. Modern panel systems are engineered to maximise port density per rack unit while preserving bend radius



## ‘Smaller form factor connectors, ultra-high density patching platforms and modular trunk systems are increasing fibre counts per rack unit while preserving manageability.’

control and front access serviceability. This allows operators to scale fibre counts without expanding footprint.

Large AI clusters often consist of tightly coupled ‘super pods’ which can span up to 50m. Within these architectures, factory terminated trunk assemblies and modular cassette-based distribution provide rapid deployment, consistent performance and simplified migration.

### LATENCY CONCERNS

A common misconception is that structured cabling introduces additional latency due to extra connection points. In AI super pod architectures where link lengths are typically under 50m, light propagation delay is approximately 250ns. In comparison, forward error correction (FEC), frame buffering and queuing delays contribute significantly more latency.

IEEE channel specifications allocate connector loss budgets of approximately 1.5dB for multimode fibre and 2.5dB for singlemode fibre. When connectors are manufactured to tight geometric tolerances, tested for insertion loss and return loss compliance, and maintained through disciplined cleaning procedures, structured connectivity does not compromise high speed or AI workload latency.

This shifts the design conversation toward performance assurance and lifecycle reliability. Precision

engineered ferrules, low loss alignment sleeves and secure latching mechanisms ensure repeatable optical performance. Proper cable management accessories further protect connector interfaces from stress and contamination, safeguarding long-term link integrity.

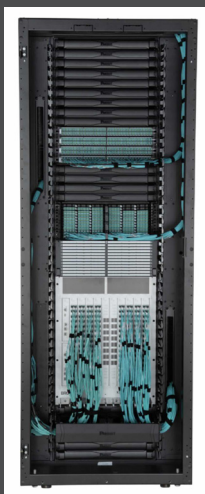
### DEBATING POINT

As AI clusters scale to thousands of GPUs, the debate between structured cabling and direct point to point connectivity has intensified. While point to point may appear simpler at small scale, complexity escalates rapidly in high density GPU environments.

Structured connectivity introduces modular patch panels, labelled adaptor fields, high count fibre trunks and horizontal and vertical cable managers designed to separate trunk and patch pathways. This modularity enables simplified deployment and faster installation, clear traceability and documentation, reduced mean time to repair (MTTR) and minimal disruption during hardware refresh cycles.

Hardware refresh in AI environments may occur every 12-18 months. A structured backbone allows servers to be replaced by reconfiguring short patch leads without disturbing core trunks, protecting capital investment and reducing downtime.

Rail optimised topologies require deterministic mapping between GPU ports and leaf switches. Structured connectivity systems with colour-coded patching



fields, port identification and physical separation of network domains make this deterministic mapping achievable and repeatable.

### ON THE RIGHT PATH

High density fibre infrastructures can overwhelm containment pathways if not carefully designed. Consolidating multiple fibre runs into high count trunks can reduce pathway utilisation by up to 70 per cent.

Purpose built fibre routing systems, overhead pathways and rack integrated management fingers help segregate power and data while maintaining minimum bend radius compliance. Properly designed connectivity frames support front and rear access, sliding trays and modular growth without disturbing adjacent live circuits. Reducing congestion has measurable consequences:

- Improved airflow and thermal efficiency
- Lower cooling costs
- Reduced mechanical strain on cables
- Enhanced serviceability

As AI workloads demand greater rack power densities, airflow optimisation becomes inseparable from connectivity planning. Cable management is no longer cosmetic – it directly influences energy performance and reliability.

### METAL WORK

While fibre dominates high speed AI interconnects, copper cabling remains indispensable across enterprise and data centre environments. Its cost efficiency,

power over Ethernet (PoE) capability and ease of termination ensure continued relevance.

Category 6A copper cabling supports 10Gb/s over 100m and remains widely deployed in enterprise networks. High performance modular jacks, patch panels and shielded connectivity options provide consistent electrical performance while supporting high density installations.

In intelligent buildings, copper connectivity extends beyond data transport. Robust field terminated plugs, high cycle modular interfaces and zone enclosure solutions support flexible reconfiguration of workspaces, access points and building automation systems.

One of copper's defining advantages is PoE compatibility. IEEE 802.3bt supports power delivery up to 100W, enabling wireless access points, security cameras, LED lighting systems, IoT sensors and smart building controls.

Advanced copper connectors designed for high mating cycles and secure retention ensure reliable power and data delivery. Enhanced conductor designs and improved thermal dissipation characteristics allow cable bundles to sustain higher PoE loads.

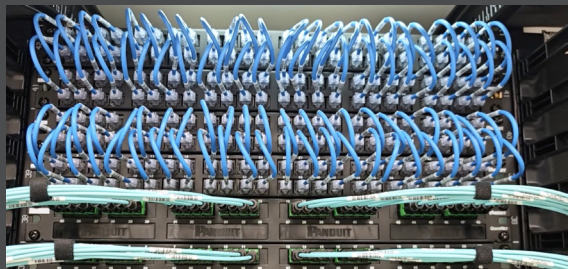
### ROLE PLAY

Copper plays a significant role within data centres, particularly for management networks and short reach interconnects. Category 8 cabling supports 25 Gigabit Ethernet and 40 Gigabit Ethernet over 30m, aligning with top of rack and end of row architectures.

In GPU deployments, thousands of copper patch leads may be required solely



for management connectivity. Structured copper patch panels with angled port orientation, integrated strain relief and cable segregation channels prevent disorganisation and simplify troubleshooting. Shielded systems further enhance electromagnetic compatibility in high power rack environments, protecting sensitive management traffic from interference generated by high current equipment.



## SUSTAINABILITY CONSIDERATIONS

Sustainability is increasingly central to infrastructure planning. Copper cabling offers recyclability and lifecycle transparency, supported by Environmental Product Declarations (EPDs). Within AI data centres, multimode fibre transceivers may consume up to 15 per cent less power than singlemode equivalents for short reach applications.

Emerging DC power distribution concepts using PoE-based architectures may reduce conversion losses that can approach 20 per cent in traditional AC to DC systems. Connectivity design is increasingly intertwined with power architecture, making cable gauge, bundle design and thermal modelling strategic decisions rather than secondary considerations.

## ROAD TRIP

The roadmap toward 1.6Tb/s and higher speeds will continue to reshape connector strategies. Parallel optics, higher fibre counts and advanced modulation schemes are enabling greater bandwidth over existing fibre infrastructure.

Smaller form factor connectors, ultra-high density patching platforms and modular trunk systems are increasing

fibre counts per rack unit while preserving manageability. Infrastructure deployed today must therefore accommodate higher fibre counts and modular upgrades without wholesale replacement.

## NEXT STEPS

In both enterprise and AI-driven environments, connectors are no longer passive components. They are performance enablers, density managers, airflow protectors and sustainability contributors. Connectivity architecture has become a strategic asset – forming the resilient, scalable foundation upon which next generation digital infrastructure depends. ■



### HANS OBERMILLACHER

Hans Obermillacher is senior business development manager for data centres EMEA at Panduit. He has over 20 years' experience in the data centre industry.

## Panduit appoints Holly Garcia as chief commercial officer

Panduit has promoted Holly Garcia to the position of chief commercial officer. She will lead Panduit's global commercial strategy, focusing on the company's commitment to innovation and delivering a best in class experience for customers.

In her most recent role as vice president of Panduit's data centre business unit, Garcia spearheaded global growth and innovation initiatives. She led the development of business strategy and directed new product introductions

to strengthen Panduit's position in the rapidly evolving data centre market.

With more than 25 years of experience in sales, marketing and business unit leadership, Garcia brings a proven track record of driving commercial success.

'I'm excited to lead our commercial strategy during this time of growth,' explained Garcia. 'Our team's commitment to innovation and customer success has positioned us as a trusted partner globally, and I look

forward to driving even greater value for our customers and stakeholders.'



## Ian Rafferty becomes group operations director at n2s

n2s has announced the appointment of Ian Rafferty as group operations director. With extensive operational and business leadership experience gained in senior positions at blue chip services companies, Rafferty has a proven track record in driving successful change, business transformation, cost optimisation and customer communications management strategies.

As group operations director for n2s and its sister company, Bioscope Technologies, Rafferty is responsible for driving and implementing business processes which will

optimise operational efficiencies, capacity and productivity to achieve maximum return on investment and deliver exceptional customer experience.

Rafferty said, 'This is an incredibly exciting opportunity to be involved in a growing industry and a business which is genuinely focused on

delivering massive environmental benefit.

At the same time, it allows me to exercise my passion for operational excellence in ensuring n2s and Bioscope scale efficiently to meet unprecedented market demand.'



## Richard Pimper joins Portus Data Centers as chief operating officer and chief technology officer

Portus Data Centers has appointed Richard Pimper as its new chief operating officer and chief technology officer.

In this dual role he will be responsible for the group's overall technological strategy as well as key operational matters as Portus Data Centers continues to grow.

With over 25 years of experience in IT infrastructure, data centres and cloud strategies, Pimper possesses extensive expertise at the intersection of technology, operations and economics. His work focuses on scalable infrastructure models, cloud adoption and energy efficient and sustainable operating



In his new role Pimper will drive the expansion and scaling of technical platforms, the further development of energy efficient data centre solutions and the operational integration of new locations. He said, 'The demands placed on data centres are fundamentally changing as

increasing performance requirements, new technologies such as AI and edge computing, and the growing focus on energy efficiency and sustainable operating models are shaping the market.'

## Mayflex strengthens its security team with appointment of Dan Miller

Mayflex has further strengthened its external security team with the appointment of Dan Miller, who will focus on the London and south-west. He joins Mayflex from Veracity, where he served as the lead UK systems sales manager. Miller brings extensive experience from across the security sector, having also previously worked as a senior security consultant at Westronics, supporting a wide range of projects and customer requirements.



Francesco Bellavia, director of sales for security at Mayflex, commented, 'We are delighted to welcome Dan to the team. He brings a wealth of experience in security and access control, a strong commitment to customer service and a clear drive to succeed. Dan will be working closely with new and

existing customers to support their security and access control needs, ensuring they receive the highest levels of service and technical expertise.'

## Schneider Electric to become Official Energy Technology Partner of McLaren Racing

Schneider Electric will become the Official Energy Technology Partner of McLaren Racing. Together, they will develop and deploy energy technology that enables peak performance in the most demanding environments, whether it's delivering robust power solutions trackside at race circuits around the world or back at base at the McLaren Technology Centre in Woking.

Schneider Electric and McLaren Racing will build on their supplier relationship spanning more than 20 years, solving hard energy problems where performance and



consistent running are non-negotiable. This will include optimising existing assets in and around the wind tunnel, manufacturing facilities, data centres and beyond with

resilient systems to reduce energy consumption.

Olivier Blum, CEO at Schneider Electric, said, ' Racing is one of the most

challenging environments to demonstrate the value of advanced energy and digital technology. McLaren Racing pushes every system to its limits, which is exactly where our expertise in performance, reliability and efficiency makes the difference.'

## Colt Technology Services scales up Middle East operations to support surge in customer demand

Colt Technology Services is strengthening its business in the Middle East to meet a surge in growth opportunities in the region. Colt plans to expand its team and continue building its business in its existing markets including Turkey and Dubai, while partnering with local operators in markets including Saudi Arabia and additional regions of the United Arab Emirates, Qatar, Bahrain, Kuwait and Oman.

The investment will see Colt expand its digital infrastructure and reinforce its position as gateway into the region, supporting customers who require secure,



resilient and deterministic connectivity with solutions including enhanced Ethernet, direct connections to cloud providers and low latency services. Part of this investment will see customers benefit from deeper resilience as Colt leases capacity in three subsea cable systems connecting Europe and Asia with countries in the Middle East.

Keri Gilder, CEO at Colt, said, 'Businesses are increasingly looking to the Middle East as a land of extraordinary opportunity – a region reshaping the global digital economy and setting the pace for the next era of AI-powered innovation.'

## CHANNEL UPDATE IN BRIEF

Northamber has appointed Darren Spence as group managing director. Spence brings over 27 years of experience in the IT channel, with senior leadership roles spanning reseller services, emerging technologies and consultancy engagements in distribution.

Emtelle has concluded a strategic deal to produce fibre optic core in Indonesia, strengthening its global manufacturing capacity and supply chain resilience.

BCS Consultancy has launched a new Sustainable Development Service in response to growing pressure on data centre projects around power availability, planning risk and community acceptance. The business has also appointed James Rogers Jones as head of sustainable development to lead the new service line.

Forfusion has announced a strategic partnership with Stellium Datacenters. The collaboration will support the North-East AI Growth Zone's ambition to become a nationally significant hub for advanced digital technologies.

Emerge Digital has helped Gloucester Rugby transform its digital infrastructure, from installing a robust wired network and integrating big screens to relocating staff offices and upgrading team technology. This is all underpinned by ongoing managed IT support, matchday assistance and cybersecurity solutions.



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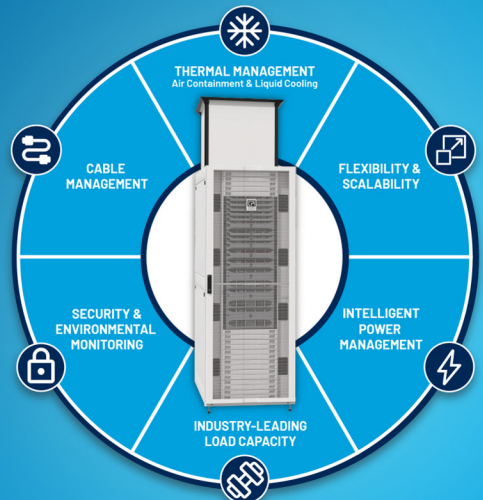
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# Getting it right first t

For over three decades **Matthias Gerber** has pioneered developments in LAN cabling, developing product strategy and innovation in high performance network infrastructure. Rob Shepherd spoke to him about his life and career and the experiences along the way

**▶ RS: Tell us a bit about yourself – who are you and what do you do?**

MG: I'm an electrical engineer and started at R&M 31 years ago as a development engineer for the first Cat. 5 module. Over the years I've held several roles in development, product management and presales, and for the past 12 years I've been responsible for the LAN cabling market segment. Today that includes overseeing the global LAN cabling portfolio and leading the product management group for the RJ-45 product range.

Before joining R&M in the mid-1990s, I worked as a test engineer and as a development engineer for radio frequency equipment. I originally trained in mechanical engineering in hydropower generation, then studied electrical engineering with a focus on high frequency technology and later added a business administration degree. That combination of hands-on engineering and business has helped me a lot when it comes to balancing technical innovation, product strategy and long-term reliability.

During my time at R&M I have

represented the company in several standardisation bodies such as CENELEC TC215, ISO/IEC SC25 WG3, TIA TR42 and IEC SC48B. I'm still chair of the National Committee TK48. I'm also co-inventor on several patents related to copper connectivity and connection reliability.

**RS: What excites you about the digital infrastructure industry at present?**

MG: Even though the pioneering days of generic cabling are behind us and cabling systems are in danger of becoming a commodity, the LAN continues to reinvent itself with new applications and opportunities. We're no longer 'just' connecting PCs – we are building the nervous system

for intelligent buildings, factories and even cities.

Power over Ethernet (PoE) is a good example. With modern 4-pair PoE we can deliver up to 90W over the data cable, which suddenly makes it realistic to power lighting, sensors, access control, screens and many other devices directly from the LAN. At the same time, Single Pair Ethernet (SPE) is emerging as a way to bring Ethernet/IP all the way down to

**'The in-depth knowledge of LAN cabling in the industry is surprisingly low. Improper design and installation can compromise any cabling system, but due to the resilience of Ethernet, many problems are not recognised immediately.'**

ime

simple field devices and sensors, over long distances and with very small, lightweight cabling.

What also really interests me is the convergence of IT and building technology. Concepts like All-IP, the digital ceiling and hybrid optical fibre/power cabling turn the LAN into a universal, application neutral platform. That platform can feed Wi-Fi 6/7 and 5G indoors, connect thousands of IoT devices and support edge computing – all on one consistent infrastructure.

**RS: What challenges do vendors of copper and fibre network infrastructure solutions currently face?**

MG: One major challenge is maintaining the quality of the cabling so that it works ‘first time right’ and over its entire expected lifespan. Low cost manufacturers are flooding the market with products that look good on paper and claim every certification imaginable, but often cut corners on materials, contact technology or shielding. Distinguishing truly robust infrastructure from ‘good enough for now’ is becoming harder.

At the same time, the technical requirements are becoming more demanding. High power PoE up to 90W and 24/7 operation put thermal and electrical stress on cables, connectors and terminations. If cable bundles heat up too much or contact resistance increases in the plug, you can end up with hidden performance issues or even damaged components.

That’s why we talk so much about remote power categories (RP1–RP3), controlled bundle sizes, higher copper cross-sections and technologies such as insulation displacement contact (IDC) that remain stable over decades.

For vendors, the challenge is to design and test systems for these worst case scenarios, while the market often still compares products purely on price and nominal category.

**RS: Do end users give enough consideration to the physical infrastructure?**

MG: The short answer is no.

Part of the problem is that Ethernet is an extremely resilient transmission protocol. If something does not work at a given speed, it simply reduces the transmission speed



until a connection can be established again. In most cases, the end user does not see or directly experience the underlying problems, they just wonder why the transmission is sometimes slower.

What we often see is that organisations invest in the latest Wi-Fi 6 or Wi-Fi 7 access points or new switches, but leave 10-15 year old Cat. 5e or basic Cat. 6 cabling in the walls. That cabling was never designed for today's mix of Multigigabit Ethernet, dense Wi-Fi, security systems and high power PoE, and it may also suffer from alien crosstalk issues that weren't even measured at the time of installation.

Because things 'still work somehow', awareness of cabling quality is very low. However, when users move to higher speeds or start to run large number of PoE devices on existing links, the weaknesses of the legacy infrastructure suddenly become visible.

**RS: Should only those with appropriate training and skills in cabling be able to configure and install network infrastructures?**

MG: The in-depth knowledge of LAN cabling in the industry is surprisingly low. Improper design and installation can compromise any cabling system but, due to the resilience of Ethernet, many problems are not recognised immediately. They appear later in the form of performance issues, limited PoE capability or reduced lifetime.

With high power PoE and remote power categories, planning and installation have become even more complex. Installers need to understand not only categories and classes but also bundle currents, derating of link lengths due to heating and the impact of connector technology on long-term contact resistance. That is not something you can pick up casually in an

afternoon.

Qualified partner programs (QPPs) offered by cabling manufacturers play an important role here. They provide the necessary theoretical and practical training so that partners can design, install and verify cabling that really meets the standards – and will still support new applications 10-20 years from now.

**RS: Do people take enough notice of cabling standards and would one set of global cabling standards make life easier for everyone?**

MG: The number of people who are truly fluent in the standards is lower than I would personally like to see. Installation guidelines from cabling manufacturers attempt to close these gaps and translate dense standards language into practical rules for planners and installers.

There is one set of global cabling standards – the ISO/IEC 11801 family. Regional standards such as CENELEC EN 50173 in Europe and ANSI/TIA-568 in North America also exist. EN 50173 is essentially technically similar to ISO/IEC 11801, so in Europe it's relatively straightforward.

With the TIA standards you must be more careful because some details are different and reflect the specific conditions of the US market. In recent years, installation standards such as EN 50174 and ISO/IEC 14763-2 have also introduced new concepts such as remote power categories (RP1–RP3) to help plan PoE capable cabling and control heating in cable bundles. This is very useful – but it also shows that simply having 'one global standard' does not automatically make life easy. You still need people who really understand what's behind the tables and definitions.

**RS: What advice would you give an**

### end user looking to purchase a cabling system?

MG: Choose your partners carefully. In the end, you must rely on them to work in accordance with standards and best practices. Ultimately, it comes down to trust – in your planner, your installer and the manufacturer behind the system.

From a technical and economic perspective, I would advise thinking in lifecycles of at least 15-20 years. The structured cabling is the part of the network that you do not want to replace every few years. So, it makes sense to design for the next generations of Wi-Fi, Multigigabit Ethernet and PoE, and to consider smart building requirements such as digital ceilings, All-IP, SPE and hybrid solutions right from the start.

In general, investing in high quality cabling that delivers first time right performance and reliable operation over a long period will provide the best total cost of ownership (TCO). It reduces troubleshooting, avoids unplanned downtime and gives you the headroom to support new applications without tearing open walls and ceilings again.

### RS: Who is the person you most admire from the industry and why?

MG: Hans Reichle, the co-founder of R&M, was a major inspiration for me. In the 1960s he left the security of an established supplier to industrialise what was then a very simple idea – a telephone outlet and connector that made installers' lives easier. The courage to take a risk and build

**'Low cost manufacturers are flooding the market with products that look good on paper and claim every certification imaginable, but often cut corners on materials, contact technology or shielding.'**

something new has shaped the company to this day. What impressed me most about Hans was his attitude. He was never satisfied with what had been achieved in the past and always asked how we could do things better in the future.

He stayed curious about new technologies, supported the move

from analogue telephony to data networks and later to fibre and digital buildings, and he gave his employees the trust and freedom to implement innovations. For me, that combination of long-term thinking, quality focus and entrepreneurial courage is exemplary.

### RS: What's the best piece of advice you've been given and how has it helped you during your career?

MG: Be aware – for many people, there is never enough money and time to do it right, but always enough to do it twice! This advice has always motivated me to do things right first time and to strive for solutions that last their intended lifetime, even if that requires a bit more initial effort.

It is very much aligned with the way we design cabling systems and with concepts such as 25-year system warranties in our industry – you invest more care in planning, components and installation, and in return you get an infrastructure that quietly does its job for decades. Overall, I am deeply convinced that doing it right once is the most cost effective and sustainable approach, whether you are talking about a cabling link, a product or a career decision. ■

# Bits and pieces

In this month's Knowledge Bank, where tech is demystified, [Carrie Goetz](#) explains how packets move around the internet

▶ Ever wondered what the magic is that moves your data around the world? Let's connect the footbone to the legbone, so to speak.

## POINT OF ORDER

Equipment in a data centre operates much like the network at your house. On one side of your router you have your LAN and on the other side is the internet.

For everything to move and communicate through the internet, the TCP/IP protocol stack is the international language. TCP/IP traffic generally travels over Ethernet. TCP/IP is the 'common language' while Ethernet is the physical transport mechanism. Network cards break down transmissions into fixed size packets, each containing a piece of the data and these packets get numbered for ordered reassembly at the receiver.

Packets can contain bits of voice conversations, pictures, emails, commands, connection requests etc. Each one also contains addressing information. All our devices have both a unique MAC address assigned by the manufacturer and an IP address that provides routers with information needed to route packets. Each packet contains the destination address and the return address. If the destination is outside of your home network, the router hands the packets to the internet.

## TRAVEL LOG

Routers interconnect over terrestrial links and satellites. Terrestrial connections include optical fibre, copper cables, cellular,

Wi-Fi, point to point, line of sight radios, subsea cables etc.

Central offices and carriers have thousands of connections. Carrier routers listen to internet GPS info (internet traffic, delays and outages), then provide real-time travel information so routers know how to get a packet to the destination via the most effective path(s).

When the receiver isn't available, the sender is notified and the packet is either retransmitted or the device reports an error and errant packets are removed.

## WAR AND PEACE

Our routers and the cybersecurity devices create a demilitarised zone (DMZ), yes, just like in war. War against evil doers. The DMZ area protects the networks on both sides from bad actors like viruses, malware, denial of service attacks etc.

Packets enter the data centre either over the facility's LAN or, if external, as cleared through the DMZ. Once a packet hits a data



centre, it travels the data centre's LANs to its destination. LAN links interconnect via switches, which operate at the data link layer of the IP stack, while routing works at the network layer. The difference is that switches don't support best path routing. A switch passes packets port to port until they hit their destination device. Routing switches, or Layer 3 switches,

combine both functions.

### WHAT'S IN STORE?

If a packet contains a server request, it travels via the local switch to the server. Servers are the data centre side of our applications. When you interact with your apps, you are most likely interacting

with a data centre server. Where storage is involved, a separate network facilitates communication between the storage devices and servers, while, less commonly, the storage is inside the server.

Storage devices (often called arrays or SAN arrays) back-up to other storage devices, generally via a dedicated network. Usually, there are multiple networks in a data centre that are separated to provide traffic control. Routers and routing switches handle internetwork traffic. Switches connect most of our equipment

within the data centre.

The switching devices themselves contain uplink ports for connection to other switches. The packets move from one device to another until the destination address is reached, and in reverse for data return. The network to the outside world is called the WAN. Now that we know the parts, let's follow an email conversation.

### GET THE MESSAGE

Suppose you send an email. Your laptop formats (packetizes) the email, then it moves the packets from your network card over your LAN to your router. Your router examines the packet's destination address. Since it is for another network, your router passes it to your provider or carrier. From there, it hits other carrier networks.

Routing continues until it reaches the data centre's DMZ, which decides if the packets are behaving. If so, the DMZ passes the packets to the data centre's LAN switches, which then forward them to the correct server. The server deposits the email to the SAN storage, where it sits until the recipient sends a request for retrieval. The email server then returns an acknowledgement to the sender and the process for retrieving the email is the same, except the recipient is fetching instead of depositing. If the receiver is local to the data centre, the only part that changes is the internet activity.

### NOT FORGOTTEN

Just because you delete something from your device, that doesn't necessarily mean it isn't still hanging out on a SAN. In fact, it probably is in the ether somewhere. ■



# Quickclicks

Your **one click guide** to the very best industry events, webinars, electronic literature, white papers, blogs and videos

**Vertiv** has published its latest Frontiers report that identifies five key trends reshaping the technology landscape. [CLICK HERE](#) to download a copy.

The State Of Enterprise Resilience is an ebook from **Absolute Security** that provides a comprehensive look at the state of cyber and business resilience across global enterprises. [CLICK HERE](#) to download a copy.

2026 State Of Data Integrity And AI Readiness is an analyst report published by **Precisely** in partnership with the **Center for Applied AI and Business Analytics at Drexel University's LeBow College of Business**, which uncovers what's really holding businesses back and how leading organisations are closing the gap. To download a copy [CLICK HERE](#).

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Beyond Compliance – Why HPDs And EPDs Are Critical For Green Building Certifications is a blog by Jonathan Ciccio of **Siemon**.

[CLICK HERE](#) to read it.

The **Wireless Broadband Alliance (WBA)** has published its Enterprise Security for Private 5G Networks report.

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The Quiet Revolution: How Data Centres Remade Slough And Secured The UK's Digital Future is a white paper from **Kao Data** that examines how Slough evolved into Europe's largest data centre cluster.

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The Rise Of Direct To Chip Cooling As A Top AI Cooling System is a blog by Christopher Leonard of **Schneider Electric**.

[CLICK HERE](#) to read it.



# Fit for purpose

Steve Cowles of AEM Networks outlines the keys to the successful testing of installed copper and optical fibre cabling

When it comes to the testing of installed copper and fibre cabling, many factors can influence the outcome. Successful testing can be accomplished by following appropriate industry and manufacturer guidelines, along with some common practices and tips from the field. The information provided here is not all-encompassing but is intended to help mitigate common issues faced when testing installed copper and fibre cabling systems.

- You have the latest firmware/software from the manufacturer on your test equipment, so you have the latest features and test limits.
- Tester batteries on both main and remote units are charged daily after testing.
- Test equipment is within the recommended calibration interval, typically 12 months.
- Technicians are properly trained in the use of equipment. Contact the manufacturer for training.

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## FIRST THINGS FIRST

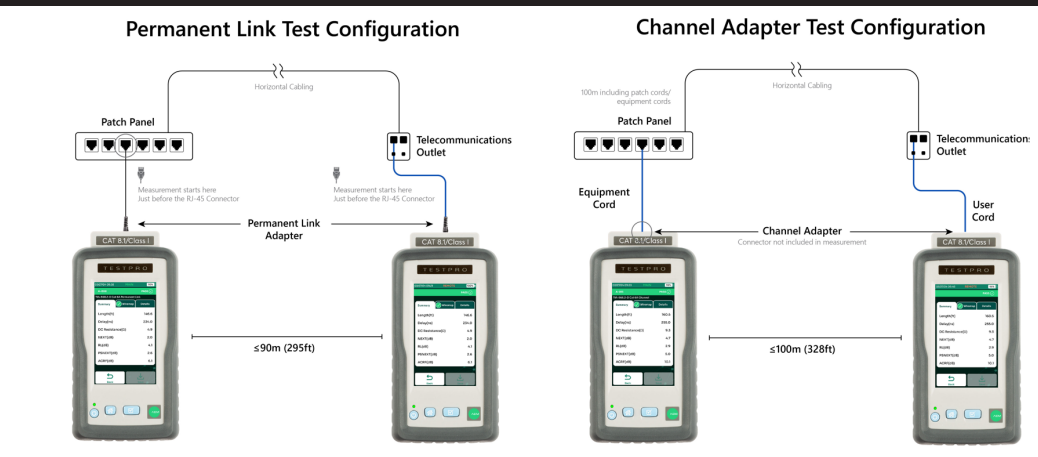
Certification test equipment should be well maintained, paying particular attention to the condition of all test adaptors and associated cords, which should be inspected regularly. Look for worn connectors/cables and any obvious damage or debris in the connector interface between the test adaptor and tester mainframe. Ensure that:

## TEST SET-UP

Always use the correct test set-up in the tester (test limits, cable, connectors, labelling scheme etc) and the appropriate test adaptors for the test to be performed.

## Common test types and adaptors for copper:

- **Permanent link testing.** Typically, a patch



panel at one end and telecommunications outlet (jack) at the other end. Use permanent link adaptors.

- **Channel testing.** When patch cords/equipment cords are connected to the link at each end and are to be included in the test. Use channel adaptors.
- **Modular plug terminated link (MPTL) testing.** Patch panel at one end and an 8P8C (RJ-45) modular plug at the field end, commonly used for connecting wireless access points, cameras and other devices. Use permanent link adaptor on the main unit at the panel and patch cord adaptor rated for the category (Category 5e, Category 6 or Category 6A) of installed cabling at the field end. A common mistake here is using a channel test adaptor instead of a patch cord adaptor.

For fibre, here are some additional considerations:

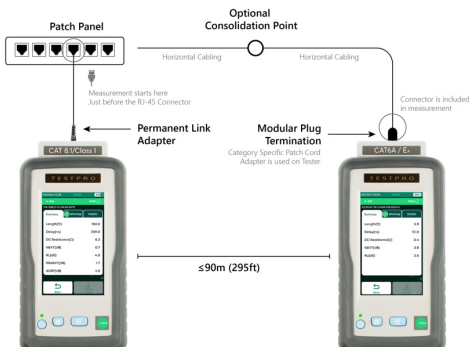
- Use appropriate test connector interfaces and test reference cords for the type of connector on the fibre under test. Most

manufacturers provide interfaces and test reference cords to accommodate the most common types, such as LC, SC and ST terminated fibre, minimising the need to use between series cords.

- Before each testing day, inspect all optical test reference cords. A visual examination should be carried out for damage/wear but also check the connector end faces using a fibre inspection microscope to identify any contamination or damage. Damaged or dirty connector end faces result in excessive loss and can contribute to test failure. Clean/replace as needed.
- Periodically inspect the light source/transmit/Tx ports of both the main and remote units to ensure they are clean and free of damage. This should be performed using a fibre inspection scope.
- Periodically inspect the optical power meter/receive/Rx port interface for dirt/damage. This is a visual inspection, so remove and clean the interface adaptor if necessary. Unlike the light source port, there is no connector end face to inspect.
- Use the correct fibre test reference cords for the fibre under test. A common error, which will result in a call to technical support, is using a singlemode test reference cord for a multimode test and vice versa. With multimode testing, ensure your test set-up is encircled flux compliant and that the core diameter of your test reference cords is the same as the fibre under test.

- Always follow the appropriate set reference procedure prior to testing. The most common, and recommended, set reference procedure is the 'one jumper'

### MPTL Test Configuration



‘Certification test equipment should be well maintained, paying particular attention to the condition of all test adaptors and associated cords, which should be inspected regularly.’

method, where a single test reference cord is connected between the main light source and remote power meter and a second cord is connected between the remote light source and main power meter of the optical loss test set (OLTS).

The one jumper method is recommended for testing between fibre distribution panels on opposite ends of the link or from a panel to a fibre end point. Two jumper and three jumper set reference methods are for testing situations where there is a patch cord or equipment cord to be included/ considered as part of the fibre under test at one or both ends of the link. Allow your OLTS to warm-up after powering on.

- Use a fibre optic inspection scope to examine the connector end faces of the installed fibre. Clean if necessary and

## FIELD WORK

Here are some key considerations when working in the field:

- Do not place your tester on a known source of electromagnetic interference (EMI), such as a power transformer. This can interfere with the measurements and cause test failures.
- Select the correct cable from the cable library on your test equipment. This is not only a record keeping detail for your test results but will ensure the correct nominal velocity of propagation (NVP) is set for the cable under test. The NVP value directly relates to accuracy of length measurement for copper cabling.

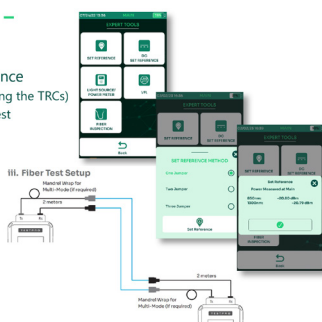
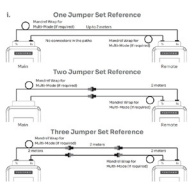
- The most common copper certification test failure is near end crosstalk (NEXT). Testers typically include a time domain reflectometer (TDR) trace function to help isolate where the problem is worst along the length of the cable. Visual inspection is also required.

Common causes of NEXT failure include mixed categories of

cabling/termination hardware, improper termination, split pairs, incorrect/ substandard components and incorrect/ defective test cables or test adaptors. Likewise, problems can be caused by

### Keys To Successful Testing – Setting Reference

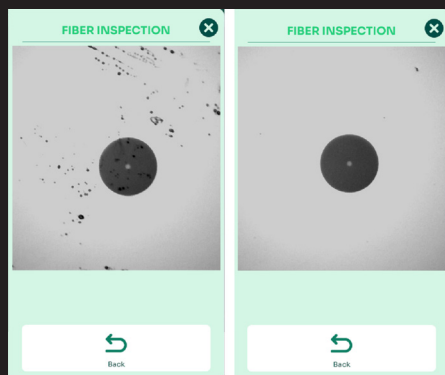
- Physical connection & set reference
- Proper set reference (including testing the TRCs)
- Proper connection to cable under test



inspect again to ensure the cleaning was successful. Cross contamination due to dirty connectors on installed fibre is the most common cause of test failure due to excessive loss.

excessive EMI in the environment, too much compression by cable ties or supports on bundles and cable kinked during installation or damaged by excessive force used when installing cable.

- For fibre optic certification, additional equipment recommendations include a connector cleaning system for cleaning fibre connector end faces, a visual fault locator (VFL) to help identify breaks from either end of the fibre, and a visual inspection scope or probe to enable technicians to inspect connector end faces. Furthermore, spare test reference cords to ensure reliable testing and an optical time domain reflectometer (OTDR) can be used for pinpointing events causing fibre loss and finding breaks along the installed fibre.
- Fibre optic connector cleaning. This is mentioned again, as it is so important. It applies to both connectors to be mated during the testing. Inspect, clean if needed, inspect again. The image shows before and after cleaning.



## THE RIGHT RESULT

Correct test results are the ultimate goal of successful certification testing of installed

copper and fibre cabling systems and are commonly required by the customer, the specifier and/or the cabling system manufacturer providing the extended warranty. Test reports provide customers with proof of quality while protecting the installer and supporting manufacturer extended warranty requirements. They should include complete test results, full details of the equipment used including calibration dates, the test configuration and application compatibility information based on the results. ■



## STEVE COWLES

Steve Cowles is product line manager for AEM Networks. He has been involved in the voice/data industry for 40 years, the last 27 focused on test equipment applications for copper and fibre certification, Wi-Fi, power over Ethernet (PoE), Ethernet and digital subscriber line (DSL).

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For customers, this means immediate visibility into every test, instant cloud synchronisation and zero reporting backlog. Project managers gain live oversight, issues are identified while technicians remain on-site and costly rework is dramatically reduced. Commissioning cycles accelerate, acceptance delays shrink and billing



accuracy improves. Because FiBLU's intelligence resides in software, new features, analytics and standards updates are delivered through app upgrades rather than hardware replacement.

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The result is faster deployments, greater operational control, reduced project risk and infrastructure performance that is future proofed globally.

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## Inside Networks

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4-ball teams will compete in a 'best 2 from 4' full handicap Stableford competition over 18 holes.

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The cost of a 4-ball team is £900+VAT.

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Testing copper and optical fibre cables after installation is essential to ensure the reliability, performance and compliance of your network infrastructure. However, investing in test equipment can be costly, especially for occasional use. Once purchased, you're tied to that model until an upgrade is justified, or you've got the budget.

That's where CMW's equipment hire service comes in. With a selection of industry leading testers, modules and adaptors from EXFO, JDSU, Fluke Networks, Fujikura, Sumitomo and Softing, you can access the latest technology without the upfront investment.



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## Networks Centre

Available from Networks Centre, the new Fluke Networks CertiFiber Max optical loss test set (OLTS) is a high performance solution designed to meet the rigorous demands of today's optical fibre networks.

Capable of measuring loss, length and polarity of up to 24 fibres in one second, the CertiFiber Max significantly reduces test time while maintaining exceptional accuracy. As part of the modular Versiv platform and LinkWare reporting system, it integrates seamlessly into a complete Tier I (OLTS) certification workflow, as well as providing inspection.

Standards compliant one jumper referencing ensures the lowest

measurement uncertainty, supported by an intuitive display that guides technicians through correct set-up and stores verifiable proof of compliance within project reports. ProjX management further enhances

productivity by reducing set-up errors and automating test processes.

Premium Care Gold Support can be enhanced by our Concierge Service, which is

available to protect your investment and minimise operational downtime.

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## TREND Networks

The new SignalTEK QT Series from TREND Networks is a cloud connected network qualification tester designed for modern Ethernet infrastructures supporting up to 10Gb/s speeds.

It goes beyond basic continuity and wire map testing by qualifying copper cabling performance from 10Mb/s to 10Gb/s, including emerging Multigigabit Ethernet speeds such as 2.5Gb/s and 5Gb/s, using advanced RF measurements of key parameters like NEXT, return loss and insertion loss. This ensures links are capable of reliably supporting bandwidth intensive applications before active equipment is installed.

The tester also locates wiring faults



quickly using live wire mapping and an integrated time domain reflectometer (TDR) for accurate distance to fault diagnostics. A built-in power over Ethernet (PoE) load test checks power delivery up to 90W, confirming cabling can support high power devices such as wireless access points, VoIP phones and IP cameras.

Wi-Fi diagnostics enable basic wireless network analysis, device discovery and channel visibility. Integrated TREND AnyWARE Cloud allows remote job set-up, real-time result uploads and automated professional reporting for streamlined project management.

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# Current affairs

**Julio Petrovitch** of NetAlly explains power over Ethernet (PoE) standards, best practices in PoE implementation and testing, and how to avoid common mistakes

 For network engineers and IT professionals PoE is now considered a fundamental technology that simplifies network deployment, reduces installation costs and enables the modern intelligent building. As offices and warehouses deploy more smart devices, new PoE standards and equipment have evolved to support them. Testing for PoE is now more crucial – and more complicated – than ever.

## THE BASICS OF POE

PoE allows Ethernet cables to deliver DC power to devices, as well as transmitting data. Without the need to run dedicated power cables to every single device, VoIP phones, wireless access points and security cameras can be deployed much more easily in a wide range of locations. PoE now powers a vast ecosystem of devices including smart lightbulbs, IoT sensors for temperature, humidity or air quality, smart locks and badge readers, digital signage and tablets for point of sale systems.

DC power in PoE can be supplied either by a PoE switch or a PoE injector. A PoE switch looks and functions like a standard network switch but has the built-in capability to inject power into the Ethernet cable. It's best for new installations, scalable networks and environments with multiple PoE devices. It provides a clean, centralised solution to monitor power usage and remotely control ports, but creates a single point of failure.

A PoE injector (or PoE adaptor) sits between a non-PoE switch and the

powered device. It takes the data signal from the switch, adds power from a wall outlet and sends the combined signal to the device. They work well for retrofitting in existing networks and are most cost effective for powering a single device. They become cluttered and hard to manage if used for too many devices.

## NEW POE STANDARDS

As network devices have become more powerful, PoE standards have evolved to deliver higher wattages. Here are the four current types:

- **Type 1 (IEEE 802.3af)** delivers up to 15.4W. This is sufficient for basic VoIP phones and simple sensors but insufficient for most modern devices.
- **Type 2 (IEEE 802.3at/PoE+)** delivers up to 30W. It is the standard for Wi-Fi 5/6 access points, VoIP and video phones, most IoT sensors and pan-tilt-zoom cameras. It uses two twisted pairs in the Ethernet cable.
- **Type 3 and Type 4 (IEEE 802.3bt/PoE++)** Type 3 delivers up to 60W and Type 4 delivers 90W. Designed for high performance Wi-Fi 6E/7 access points, digital signage, smart building gateways and managers and laptops. This is also called universal power over Ethernet (UPoE) and uses all four twisted pairs in the Ethernet cable.

'A handheld PoE testing tool will mimic a powered device and load the circuit to stress switches, cabling and patch panels, while measuring the voltage drop, actual power delivered and cable pairs being used.'

## TESTING TIMES

Unfortunately, testing during deployment is typically conducted by simply plugging in a low powered device and watching to see if the LEDs come on. This gives very little useful information. If it does not turn on, is the problem the switch, the cable or the device itself?

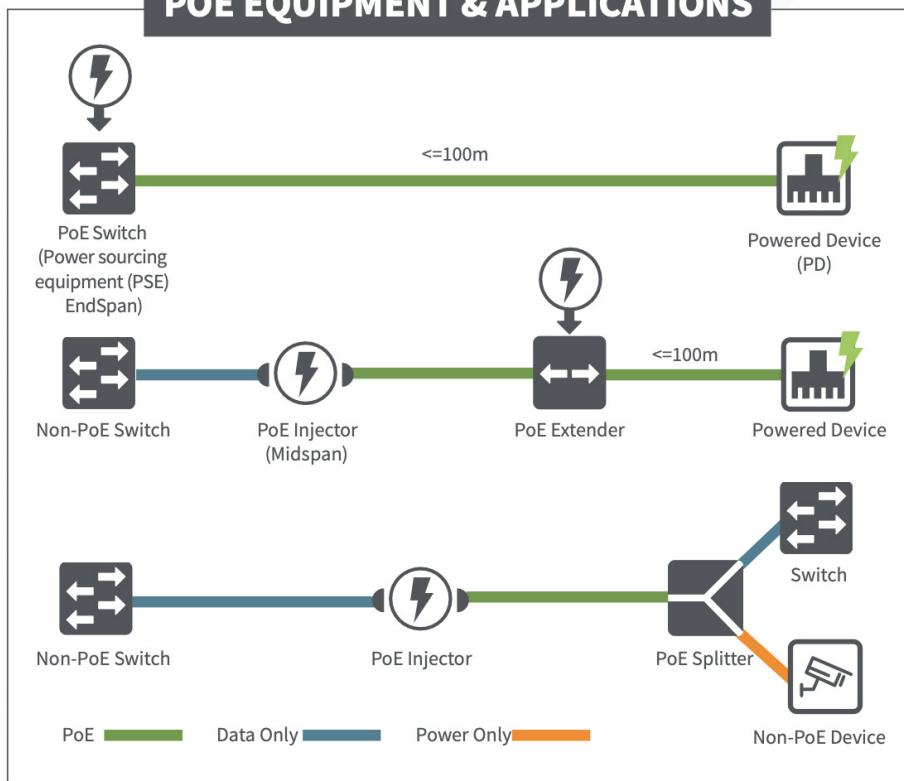
A handheld PoE testing tool will mimic a powered device and load the circuit to

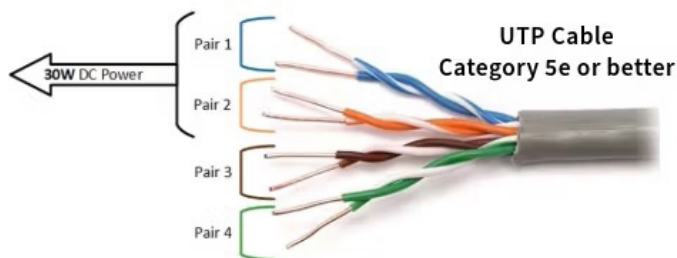
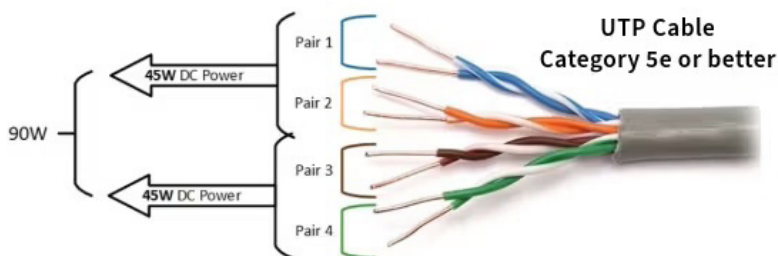
stress switches, cabling and patch panels, while measuring the voltage drop, actual power delivered and cable pairs being used. Testers can emulate any PoE client to negotiate and draw the exact wattage that the specific device in question needs.

## BIG ISSUES

Here are some common PoE issues that can be identified by appropriate testing:

## POE EQUIPMENT & APPLICATIONS



**PoE/PoE+****UPOE/  
UPOE+**

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- **Powered device and power source incompatibility**

Your switch infrastructure and device must support the same standard. PoE standards are backward compatible, so a modern UPOE switch can power a UPOE device and an older PoE+ device, for example. The switch and device negotiate the correct power level, so there's no risk of damage.

But the reverse is not true. An older PoE+ switch cannot power a newer UPOE device, period. Also, some legacy hardware from Cisco uses an older, proprietary PoE standard.

- **Incorrect port**

Many switches have some PoE ports and some non-PoE ports. If you've verified that the device and source use compatible standards and there is no current, it may be plugged into a non-PoE port.

- **Wrong cable type**

Higher standards also require the correct

cables. For PoE+ (30W), Category 6 is the minimum professional standard. For UPOE/PoE++ (60W and up), Category 6A is the requirement.

The reason is simple – heat. Pushing 60W or 90W through a cable generates a significant thermal load. The thicker copper conductors in Category 6A have lower resistance, which means they generate less heat and can handle the thermal stress far better than Category 5e or Category 6. Using undersized cabling is also a fire hazard.

- **Bad cabling**

A device may not be getting enough power because the cable itself is damaged or defective. Unbalanced cable pairs or a bad punch down when the cable was installed can cause this. Opens, shorts, split pair or crossed cables can also cause problems for high powered devices that need all four twisted pairs. Poor quality cabling (such as copper clad aluminium) can lead to excessive voltage drop and

power loss.

Length is also a factor. The Ethernet cable standard (TIA/EIA-568) defines the maximum length for reliable data transmission and PoE delivery as 100m. Past this length, voltage will drop and devices may not work. However, pushing a cable past this limit is sometimes possible because modern network interface cards can 'clean up' signals on the fly. If you must use a cable longer than 100m, testing the actual wattage available in real world conditions is vital.

- **Misconfigured power sourcing equipment**

The PoE switch or injector may not be configured correctly. If your test shows no current and no issues with the cable, then check the switch or injector configuration.

- **Power budget limitations**

This is a very common issue in new deployments. Every PoE switch has a maximum wattage it can supply across all ports. If the total power requirements for all devices connected to the switch exceeds that budget, some devices won't power on. If you've ruled out other switch and cable issues, check the total power demands being put on the switch and compare it to its budget.

Avoid maxing out your PoE power budget. A switch running at 99 per cent capacity is stressed and has no room for future growth. A good rule of thumb is to plan for your total device load to be no more than 75-80 per cent of the switch's total budget.

## A RELIABLE NETWORK

With PoE powering Wi-Fi 7 access points, security systems, digital signage, building

controls and more, failure carries real business risk. Testing has become essential as higher wattage, tighter power budgets and mixed cabling environments raise the chance of hidden faults. Network engineers should understand the current landscape and make sure they have the PoE testing capabilities they will need to solve problems quickly and accurately. ■



### JULIO PETROVITCH

Julio Petrovitch is a product manager at NetAlly, plus a certified CWNA/CWAP/CWDP/CWSP. He's worked with network design, testing and validation for more than 18 years, and has had the opportunity to work with multiple networking technologies.

# Right result

Nick Taylor of Networks Centre explains MPO testing to BS EN 50174-4

Before light source power meters (LSPM) and optical loss test sets (OLTS) were available specifically for testing multi-fibre push-on (MPO) connector cabling, installers had to use a workaround using single optical fibre testers with MPO-LC fan-outs or cassettes added to both ends. Not only is this method slow, it requires reference grade connectors on the fan-outs/cassettes, uses the less accurate three jumper reference method and also requires substituting LCs for MPOs, which do not have comparable losses.

one of the very small form factor (VSFF) variants.

One jumper is always the most accurate (and therefore preferred) method for adaptor to adaptor measurements. Considering BS EN 50174-4 permits the use of gender-changing MPO 'when the pin assignment of the fibre test cords used can be altered', it shouldn't ever be necessary to use the enhanced three jumper method detailed in Annex F of BS EN 50174-4.

Whilst using gender-changing test reference cords (TRCs) will provide more



## STANDARD ISSUE

BS EN 50174-4 was published in December 2025 and covers testing of installed optical fibre cabling. It is mostly derived from ISO/IEC 14763-3:2024 but also from other standards including EN IEC 61280-4-1 and EN IEC 61280-4-2.

BS EN 50174-4 does not allow for the method outlined above when testing multi-fibre connector cabling. To be compliant, the power meter adaptor must accept the same type of connector as used on the link under test – usually an MPO but it could be

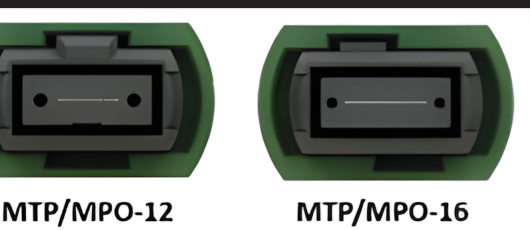
accurate results than using the enhanced three jumper method, it will be less accurate than performing a one jumper without changing the pin assignment. This is only possible if the power meter adaptors are available in both pinned and unpinned versions.

## NUMBER CRUNCHING

The most widely used MPO connectors today are the 8-fibre MPO-12 and 12-fibre MPO-12 versions, but parallel circuits use multiples of 8-fibres. This explains the

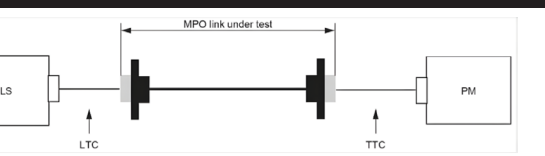
‘One jumper is always the most accurate (and therefore preferred) method for adaptor to adaptor measurements.’

introduction of the MPO-16, which is the same size as the MPO-12 although the key position has been changed to prevent accidental connection between the two



different types.

The VSFF versions are the SN-MT and the MMC, which have an even smaller footprint and may become the multi-



fiber connector of choice in future for AI deployments. Most LSPM/OLTS designed for MPO testing comprise one unit which is light source only and a power meter, as shown below.

It should also be noted that some MPO testers require the use of loopback cords for core counts of >12-fibre. For example, when testing cables with MPO-16 connectors, light is sent down eight of the cores and, at the far end, directed back to the remaining eight cores and then the total loss reading is provided. Therefore, 1.0dB would be halved to derive an estimated result of 0.5dB for all 16 cores. This approach is not compliant with BS EN 50174-4.

## SECONDS OUT

Entry level MPO specific LSPM/OLTS often only test pinned circuits (gender-changing TRCs required for unpinned), don't have native support for VSFF connectors, can only support >12-fibre using loopback cords and take >6 seconds per test. The latest MPO specific LSPM/OLTS offer native support for pinned/unpinned options versions of the MPO and VSFF connectors, support up to MPO-32 (without loopback) as a future upgrade and take one second per test. ■



## NICK TAYLOR

Nick Taylor started in this industry in 1997, holding various roles and spending most of his career working for installers, as well as six years at a leading manufacturer. Since January 2023 he has been the technical sales director at Networks Centre.

## Zayo Europe launches landmark network in Iberia through partnership with Reintel

Zayo Europe has partnered with Reintel to expand its service offering across Iberia. Zayo Europe brings its 400 Gigabit Ethernet enabled wavelength network to the Iberian Peninsula, as well as expanding its Tier-1 IP offering to Portugal and to more Spanish cities. Carriers and enterprises in the region can now connect to Zayo Europe's network, which links over 600 data centres across Europe.

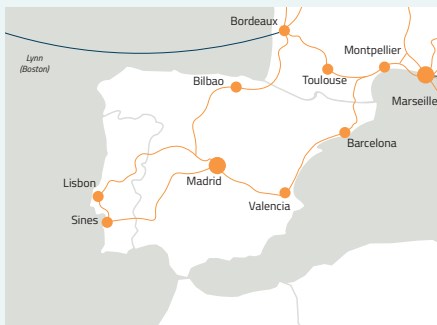
The collaboration will deliver low latency, high capacity connectivity across Iberia, connecting key business hubs including Madrid, Lisbon, Barcelona, Bilbao and

Sines. This new route will enhance network diversity, reduce deployment times and strengthen connectivity options for

businesses and carriers operating in the region.

Spanning over 3,500km of optical fibre across Iberia, Zayo Europe's network will enable seamless connectivity, faster cloud adoption and high performance handling of data intensive workloads.

The move also strengthens Zayo Europe's global reach, linking Iberia to international networks across the Mediterranean and Atlantic, and supporting the digital transformation of businesses across multiple continents.



## UrbanChain brings additional large scale renewable power online to support data centre demand

UrbanChain has gone live on a multi-year renewable power purchase agreement that adds more than 120GWh per year of UK-based, grid scale renewable electricity to its operating system. The offshore wind backed agreement increases UrbanChain's total contracted renewable generation in Scotland to an all-time high.

The additional volume strengthens UrbanChain's ability to support data centres and other high load digital infrastructure by improving how renewable generation is matched to demand by time and location. This is particularly relevant for operators

managing constrained grid connections, rising power costs and increased scrutiny on the credibility of renewable supply claims.

UrbanChain claims that the live capacity enhances its ability to serve always on, high demand users that require reliable, operational access to renewable power rather than certificate based solutions. The

agreement adds to its expanding portfolio of contracted renewable offtake and supports repeatable growth in serving data centres and other energy intensive infrastructure.



# STL and Colt Technology Services complete successful trial of multicore fibre

STL - Sterlite Technologies has collaborated with Colt Technology Services on multicore optical fibre trials executed across Colt's London metro optical network. This marks a significant



milestone in real world validation of multicore fibre technology as a sustainable, high capacity, cost efficient backbone for next generation networks supporting AI, cloud and digital services.

During the trial, STL's Multiverse multicore fibre, built in the same cladding diameter as standard singlemode fibre,

was deployed. The trial was conducted within the London Metro network between two Colt points of presence (PoPs), covering distances of ~9km and 63km. An 800Gb/s line rate was achieved with validation performed for 100 and 400 Gigabit Ethernet services.

Comprehensive testing was carried out, which delivered satisfactory results.

STL is among the first companies globally to take multicore fibre from lab to real world environments, spanning underground and duct networks with a complete ecosystem of fibres, cables and termination solutions.

## PROJECTS & CONTRACTS IN BRIEF

nLighten has announced its acquisition of a data centre in Émerainville, Paris from oXya. This strategic move reinforces nLighten's position in one of Europe's most important digital hubs and expands its portfolio of sustainable, regional infrastructure solutions. The Émerainville facility becomes nLighten's eighth site in France and adds to nLighten portfolio of over 30 data centres in seven markets.

Exponential-e has partnered with Birmingham City University to deliver a new unified communications platform that will modernise the university's telephony, contact centre and service operations to improve the student engagement and user experience.

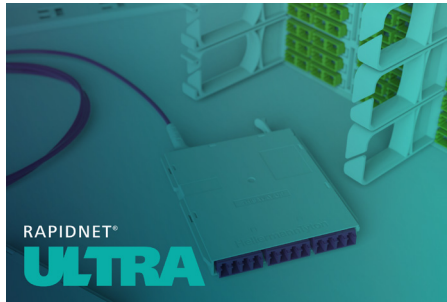
DataVita's North Lanarkshire site has been named a UK AI Growth Zone, unlocking £8.2bn of private investment for the region. The project brings together three integrated components – 500MW of AI-ready data centre capacity, over 1GW of private wire renewable energy infrastructure and Innovation Parks designed to attract next generation industries.

Huber+Suhner has deployed its CUBOsystem 400G muxponder in partnership with Boston-based network operator Towardex, enabling scalable, high capacity 100Gb/s enterprise connectivity across the Boston area.

## HellermannTyton

HellermannTyton has developed a full data centre connectivity solution that is designed to offer high density optical fibre capacity, excellent cable management and panel housing.

The all new RapidNet Ultra is a cassette based pre-terminated system that delivers a wide variety of options and flexibility when designing a data centre network. RapidNet Ultra takes the existing data centre fibre solution beyond today's requirement, offering even greater density while accommodating very small form factor (VSFF) connectivity. This supports tomorrow's requirements for high bandwidth, advanced network architectures and Ultra Ethernet.



To support the RapidNet Ultra solution, HellermannTyton has produced a Data Centre Cabling Guide to help specifiers and data managers choose the best RapidNet system to achieve their network design. It

covers everything from optical transceivers to polarity and data centre architecture and topology, assessing the key benefits and considerations at the design phase.

To complete the data centre solution, HellermannTyton can now offer GigaDuct, the fibre raceway solution designed for high performance fibre routing in your data centre.

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## Panduit

Panduit's EL2P intelligent power distribution unit (iPDU) redefines power management in mission critical data centre environments. It offers high precision metering accuracy of  $\pm 0.5$  per cent, delivering granular energy consumption data to support effective capacity planning, Power Usage Effectiveness (PUE) optimisation and sustainability initiatives.

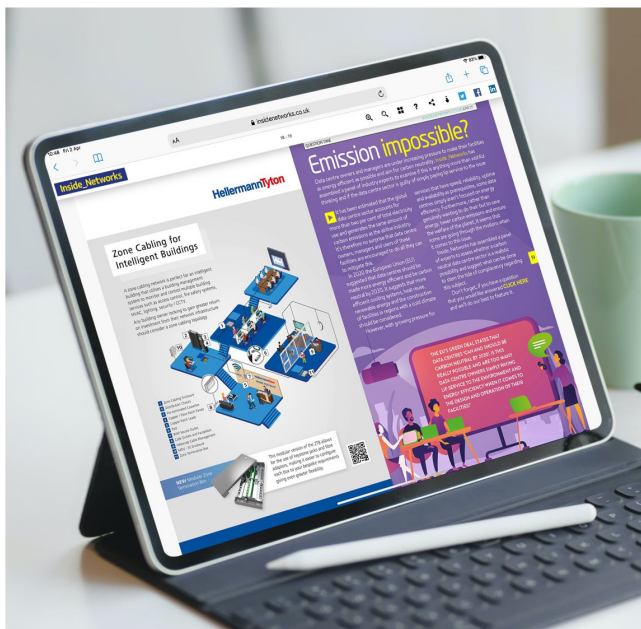
Flexibility is another key differentiator. Panduit's 4-in-1 outlet design allows each outlet to function as C13, C15, C19 or C21, simplifying deployment and supporting diverse IT loads. Dual Gigabit Ethernet connectivity with daisy-chain support for up to 64 iPDU's on a single IP address further reduces network complexity.



The EL2P series is built for software defined operations. Native Cisco Nexus Dashboard integration provides visibility into energy usage and sustainability metrics, while Redfish and RESTful application programming interfaces (APIs) ensure interoperability with data centre infrastructure management (DCIM) and cloud platforms. Secure zero-touch provisioning (sZTP) enables rapid, low touch deployment across distributed sites.

Available in single-phase and three-phase models from 5kVA to 43.5kVA for EMEA, with dual rated approvals, the EL2P combines global compliance with practical deployment.

To find out more [CLICK HERE](#).  
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# Physical fitness

Darren Watkins of Virtus Data Centres explains what must be done to mitigate the 'infrastructure wall' that could slow AI adoption



▶ Across many industries, AI is reshaping how organisations make decisions, develop products and interact with customers. Yet for all the attention given to algorithms and cloud platforms, one critical component often remains under-examined – the physical infrastructure that makes AI possible.

## STUMBLING BLOCK

As enterprises push to move AI models from pilot to production, many are finding that their existing data centre environments cannot sustain the power, cooling and resilience these workloads demand. The result is an emerging infrastructure wall that threatens to slow adoption just as the economic potential becomes clear.

AI workloads differ fundamentally from traditional enterprise IT. Conventional applications such as enterprise

resource planning (ERP) systems or office productivity software operate at predictable loads, with peaks and troughs that facilities can plan for. AI training and inference are different.

## TRAIN TO GAIN

Training a single large model can require thousands of graphics processing units (GPUs) running in parallel for weeks. Once in production, the model continues to draw power for real time inference tasks such as fraud detection or recommendation engines. These loads are continuous rather than cyclical, and they are often measured in tens, and sometimes over a hundred, of kW per rack.

Facilities designed a decade ago for 2-4kW per rack now face demands exceeding 50kW or even 80kW or more. Cooling systems intended for air circulation struggle to manage the heat

density of these new demands. Power distribution networks reach their limits and even the physical weight of fully populated racks can exceed what existing floors were built to carry. According to S&P Global Market Intelligence, the proportion of businesses shelving AI initiatives has more than doubled in the past year, with inadequate infrastructure cited as a key factor.

### DENSITY AND RESILIENCE

Running AI sustainably requires an entirely different approach to data centre design. High density compute is no longer a niche – it is rapidly becoming the norm.

Liquid cooling is at the heart of enabling this transition. Direct to chip and immersion systems enable facilities to extract heat far more efficiently than traditional air based methods. Designing for liquid cooling from the outset means integrating pipework, containment and monitoring into the building architecture, rather than retrofitting later at high cost.

Structural and electrical design must

also evolve. Reinforced floors, wider aisles and modular containment zones are needed to manage heavier racks and new airflow patterns. Electrical systems must support redundant paths and advanced uninterruptible power supplies (UPS) to maintain stability under extreme load.

Resilience is as important as capacity. AI clusters typically operate as continuous environments with little tolerance for downtime. This places a premium on robust maintenance regimes, intelligent monitoring and automation that can predict and correct thermal or power fluctuations in real time.

### CLOSE WATCH

Performance in AI is no longer defined purely by compute power. Proximity to data has become a competitive factor.

AI models draw on vast and often distributed datasets. If the compute infrastructure is physically distant from those datasets, or from the users who generate them, latency increases and accuracy can degrade. This is particularly



critical for use cases such as high frequency trading, autonomous systems and personalised digital services where milliseconds matter.

Consequently, the location of data centre capacity is now strategic. Enterprises are increasingly selecting sites based on their

connectivity to key networks and highly populated areas, not just cost or available land. Facilities near internet exchanges, financial hubs or media clusters are becoming highly prized because they combine high capacity with low latency access to data.

This shift is also influencing campus development patterns. Rather than isolated buildings, operators are creating interconnected campuses and regional edge sites that balance scale with proximity.

## THE SUSTAINABILITY EQUATION

As AI scales, so does its environmental footprint. Training a single large model can consume energy comparable to that used by hundreds of homes over a year. This reality has pushed sustainability from a secondary consideration to a core design principle. As such, operators are responding with multiple strategies.

### • Renewable power sourcing

Direct connections to wind, solar or hydro generation are becoming standard, alongside power purchase agreements that guarantee renewable supply.

### • Waste heat reuse

Capturing thermal energy from liquid

**‘One of the most persistent misconceptions among enterprises is that access to GPUs alone defines success. In practice, performance depends on the balance between compute and the environment that supports it.’**

cooled systems to feed local district heating networks is gaining traction across Europe.

### • AI-driven optimisation

Ironically, AI itself is being used to manage cooling and energy consumption, analysing live data to adjust systems for maximum efficiency.

### • Transparent reporting

Environmental, social, and governance (ESG) reporting frameworks now demand verifiable data on energy mix, efficiency and carbon intensity.

Sustainability is no longer optional for operators. It is a licence to operate and a differentiator for customers under increasing pressure to decarbonise their own supply chains.

## BUILDING IN FLEXIBILITY

The pace of change in AI architectures presents a further challenge. Hardware generations are shortening, cooling requirements are evolving and regulatory expectations are still forming. Static infrastructure risks becoming obsolete before the end of its design life.

To mitigate that risk, flexibility must be engineered into every layer. Modular

design allows operators to scale power and cooling incrementally rather than committing to a fixed configuration. Electrical distribution can be segmented and upgraded without taking halls offline, while cooling loops can be expanded or converted from air to liquid systems as densities rise.

At the operational level, workload portability is becoming essential. Customers increasingly expect to move workloads between halls or even regions to meet compliance or performance objectives. Facilities that can support this without interruption offer a clear advantage.

### GET THE BALANCE RIGHT

One of the most persistent misconceptions among enterprises is that access to GPUs alone defines success. In practice, performance depends on the balance between compute and the environment that supports it. If power delivery, cooling precision or resilience fall short, even the most advanced hardware will underperform. Similarly, siting decisions that prioritise short-term cost over long-term connectivity can introduce latency that negates computational gains.

Another overlooked factor is collaboration. AI at scale demands coordination between operators, energy providers, network partners and regulators. Designing infrastructure that anticipates these interdependencies is as important as the technical specifications themselves.

### GENERATION GAME

Across Europe, a new generation of data centres is now being planned and built with AI in mind. These facilities combine high



density power readiness, precision liquid cooling, modular scalability and integrated sustainability measures. They are designed not only for the workloads of today but for the requirements of tomorrow. ■



### DARREN WATKINS

Darren Watkins is chief revenue officer at Virtus Data Centres. He began his career as a graduate military officer in the Royal Air Force before moving into the commercial sector. He brings over 20 years of experience in telecommunications and managed services gained at BT, MFS Worldcom, Level3 Communications, Attenda and Colt. He joined Virtus from euNetworks, where he led market changing deals with several large financial institutions and media agencies.

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