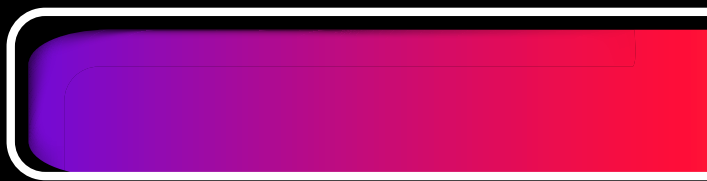


Inside_Networks

THE NETWORK INFRASTRUCTURE E-M

Time tra

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Speed of light

NEXT GENERATION DATA
CENTRE CONNECTIVITY
FOR 400GB/S AND BEYOND

JAN
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2020 REVIEWED AND
2021 PREVIEWED



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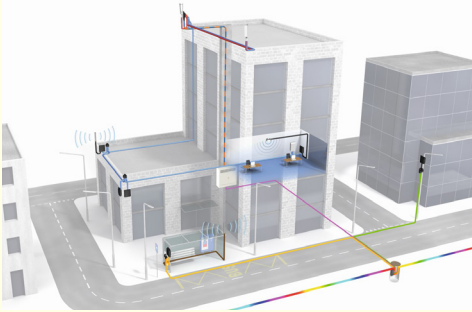
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The year of living dangerously

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No one could have possibly predicted the events of 2020 – the year when life turned upside down and we all felt like we were living in a science fiction movie. Whether coronavirus has changed things for good is yet to be seen but the last few months have drastically reshaped our relationship with technology.

Not surprisingly, this is something that our assembled panel of industry experts addresses in our traditional end of year Question Time. Referencing the data centre sector's role during this tumultuous period, Emma Fryer of TechUK sums it up nicely by saying 'the sector's ability to protect business continuity was tested for real, and the result was a solid demonstration of resilience.' All of us who have been able to work from home, keep in touch with loved ones through video conferencing and even take our minds off it all via streaming services owe the data centre sector, as well as the technology providers that make the kit that keeps these facilities working, a deep level of gratitude.

When it comes to unsung heroes, good cable management is certainly amongst them and in this issue we have two excellent articles on the subject. In the first, Colin Parker of EDP Europe looks at how a correctly managed structured cabling system can increase uptime and scalability while, at the same time, lowering operating expenses and reducing a data centre's technology footprint. In addition, Paul Malone of Sudlows explains why the importance of high standards when it comes to containment and labelling should never be underestimated.

We also take an in-depth look at what's happening in the world of connectors and connectivity. Cindy Ryborz and Carlos Mora of Corning Optical Communications examine next generation data centre connectivity for 400Gb/s and beyond, while Jonathan Lewis of Huber+Suhner explores the developing market in harsh environment connectivity.

Don't forget, if you'd like to comment on any of these subjects, or anything else, I'd be delighted to hear from you and all the best for 2021!

Rob Shepherd

Editor



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THE NETWORK INFRASTRUCTURE E-MAGAZINE



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Gartner forecasts IT spending in EMEA to grow 2.8 per cent in 2021

IT spending in Europe, Middle East and Africa (EMEA) is forecast to total \$1.075tn in 2021, an increase of 2.8 per cent from 2020, according to the latest forecast by Gartner. IT spending in the region is expected to decline 6.5 per cent in 2020.

‘The combined effects of Brexit and the coronavirus public health interventions will cause IT spending in EMEA to decline in 2020,’ said John-David Lovelock, distinguished research vice president at Gartner. ‘The way forward in 2021 is for organisations to increase, rather than decrease, the speed of their digital business initiatives and fund those initiatives by diverting funds from other areas of IT.’

The speed at which remote working is



occurring varies considerably around the world depending on IT adoption, culture and mix of industries. The US will lead in terms of remote workers in 2021, accounting for 52 per cent of the workforce. Across Europe, UK remote workers will represent 48 per cent of its workforce in 2021, while remote workers in Germany and France will account for 38 per cent and 34 per cent respectively.

Investments in delivering technologies to support remote workers will fuel spending on these technologies in EMEA by five per cent in 2021. EMEA organisations will increase their total spending on collaboration and content platforms (17 per cent), security software (11 per cent) and cloud conferencing unified communications (four per cent) in 2021.

IIoT connections to reach 37 billion globally by 2025

A study from Juniper Research has found that the global number of industrial internet of things (IIoT) connections will increase from 17.7 billion in 2020 to 36.8 billion in 2025, representing an overall growth rate of 207 per cent. The research identified smart manufacturing as a key growth sector of the IIoT market over the next five years, accounting for 22 billion connections by 2025.

The report highlighted that private 5G services are crucial to maximising the value of a smart factory to service users, by leveraging technology to enable superior levels of autonomy amongst operations. It found that private 5G networks will prove most valuable when used for the

transmission of large amounts of data in environments with a high density of connections, and where significant levels of data are generated.

Software tools leveraging machine learning for enhanced data analysis and the identification of network vulnerabilities are now essential to connected manufacturing operations.

Research author, Scarlett Woodford, noted, ‘Manufacturers must exercise caution when implementing IoT technology – resisting the temptation to introduce connectivity to all aspects of operations. Instead, they must focus on the collection of data on the most valuable areas to drive efficiency gains.’

Equinix earns DPP Committed to Sustainability mark

Equinix has been awarded the DPP Committed to Sustainability mark.

The accreditation is part of the DPP's Committed to Sustainability program, which offers a practical tool to assess content and digital media (CDM) organisations and suppliers against key environmental measures and impacts.

Equinix scored five out of five on its first response to the DPP's Committed to Sustainability survey. On average, participating companies receive scores of two out of five.

To achieve the top rating, Equinix was assessed against a set of key environmental measures and was required to demonstrate its commitment to, and progress against,

energy use, waste and greenhouse gas emissions related key performance indicators, as well as its efforts to green the CDM industry.



Jennifer Ruch

Jennifer Ruch, director of sustainability and environmental, social and governance (ESG) at Equinix, commented, 'We believe we have the responsibility to protect our collective future.

This is why we continually seek opportunities with likeminded organisations

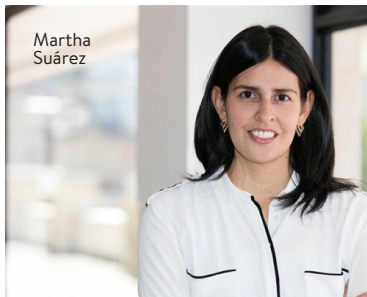
to advance our global sustainability goals across the areas of energy, renewable energy, and design and operational innovation. Achieving the DPP's Committed to Sustainability mark is a result of these efforts.'

Wi-Fi urgently needs more spectrum according to the DSA and PIP

With over half of all the connections to the internet starting or ending with Wi-Fi access and demand for broadband connectivity surging worldwide, Wi-Fi urgently needs access to the 6GHz frequency band. This is the conclusion of research from the Dynamic Spectrum Alliance (DSA) and Policy Impact Partners (PIP).

Focused on Europe, Middle East and Africa, the DCA and PIP's research concluded that licence exempt access to the lower 6GHz band should be adopted without delay, and then implemented in national regulations early in 2021. This is crucial for Europe to alleviate

congestion in the existing licence exempt spectrum and to support the Wi-Fi 6E devices that will be rolled out this year and next.



Martha Suárez

'Used for every aspect in our lives, Wi-Fi needs greater spectrum access in the 6GHz band to effectively support the modern digital ecosystem,' said Martha Suárez, president of the DSA. 'With access to wide 160MHz channels in the

6GHz band, Wi-Fi 6E will be able to deliver very robust connectivity that can enable truly immersive and compelling multimedia experiences.'

Kao Data appoints Lee Myall as new CEO

Kao Data has appointed Lee Myall as its new chief executive officer (CEO). Myall brings first class commercial leadership experience and has previously worked across the telco, software, cloud services, data centre and connectivity sectors.

Myall's arrival enables Paul Finch to transition from the role of interim CEO and continue to serve as the



company's chief operating officer (COO). This is crucial as the company prepares for the second construction phase of its £230m Harlow campus development.

Myall commented, 'I'm excited to be part of Kao Data's leadership team and, with a perfectly aligned commercial strategy, we are on track to become the UK's preeminent provider of advanced colocation for high performance computing, artificial intelligence and enterprise.'

Extreme Networks gets set to train 50,000 new cloud networking engineers for careers in the digital economy

Extreme Networks has launched a new initiative to help those looking to join or retrain in the technology industry. Extreme Academy Live is an eight week training course that is streamed live for free, teaching students the fundamentals of networking technology, wireless communication and the internet.

Extreme Networks has also announced that colleges and universities around the world including Barnsley College, The Polytechnic Institute of Tomar, Gannon University, and the Santarém School of Management and Technology, as well as IT solution partners Netjer Networks and Step CG, are now offering the Extreme Academy curriculum.

Ed Meyercord, president and CEO at Extreme Networks, said, 'There is a clear and growing demand for skilled professionals. As part of our commitment to narrowing the digital divide, we are



widening accessibility to Extreme Academy. This will help fill the demand for networking engineers and IT professionals by making training available to anyone, anywhere with free livestreamed coursework, in-depth instruction and certification. We look forward

to offering more courses and establishing more academies to reach not just students, but current professionals and displaced workers looking for job retraining.'

Dorothy Monekosso awarded honorary fellowship by BCS, The Chartered Institute for IT

The UK's only black (Afro-Caribbean) female professor of computer science, Dorothy Monekosso, has been awarded an honorary fellowship by BCS, The Chartered Institute for IT. Monekosso received the honour for her work on smart homes for people living with dementia and for her campaigning work to promote diversity in the tech sector. She will join innovators like Margaret Ross and Tim Berners-Lee on the roll of honorary fellows.



Monekosso said, 'Diversity isn't just a nice thing to have in tech teams – it is essential to creating an end product that doesn't exclude anyone, and has the highest ethical standards baked in.

Only when we have diverse teams can we properly consider all those users' experiences and needs. We need to move away from inclusion being a box ticking exercise, unless we decide that diversity remains a challenge for IT, we cannot change.'

Monekosso is helping BCS

develop a programme of engagement and support for under-represented groups throughout the IT industry. As part of this commitment, BCS is creating a new membership group, dedicated to promoting and supporting IT professionals from black and minority ethnic backgrounds.

NEWS IN BRIEF

Ericsson has completed its acquisition of Cradlepoint. The investment is key to Ericsson's ongoing strategy of capturing market share in the rapidly expanding 5G enterprise space.

Schneider Electric has announced a strategic minority investment in Planon Beheer.

Nokia has announced the world's first 25Gb/s symmetrical passive optical network (PON) broadband solution.

Vantage Data Centers has raised \$1.25bn in incremental equity capital from its existing investors, led by Digital Colony. This funding will be used to fuel ongoing expansion and development across North America and Europe.

Panduit has joined ETIM International and incorporated the ETIM classification model for technical products into its product development and reference systems and documentation.

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SCAN ME

How can you accommodate the i

Hi Rob

People have become reliant on communicating and consuming content over the internet. For this reason, internet based services are faced with a challenging situation. With the continued development of new devices and applications, will the internet be able to cope under the extra pressure of data hungry technologies? The pressure is not just about the volume of data but also about bandwidth – in 2020, video consumption represents more than 80 per cent of all internet traffic.

One reason for this huge growth is the development of virtual reality (VR). In recent months, where remote working has become the norm, VR has made a positive difference to working lives, whether it be training simulation or digital conferences it has allowed businesses to carry out otherwise difficult tasks. That being said, VR requires five times more bandwidth than traditional high definition screening to create an immersive user

experience. Furthermore, despite the name, wireless technologies require more wiring infrastructure than their LAN cable counterparts and with the convenient nature of wireless technology, the world is undeniably migrating into a wireless future.

The global, integrated design of a network has meant structured cabling infrastructures are getting more complex. The telecoms industry is doing a huge amount of work to be able to provide data to devices such as the internet of things (IoT) and VR by optimising networks and bandwidth, in an attempt to meet demand and the growing volumes of data.

To optimise a network, an efficient and reliable cabling structure is needed. The need and importance of the cabling system may differ between businesses, however, for the majority, a high-quality network will ensure a reliable, cost effective solution that will stand the test of time.

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increase in future data demand?

But what makes a reliable cabling structure? By far, one of the most important considerations when designing a cabling system is future proofing an investment. Opting for a data cable that can safely and efficiently supply high bandwidth and support business growth, will also be able to adapt to industry growth and changes. Secondly, there is a level of simplicity that comes with an effective structure – in a typical environment there will be several different devices being used at the same time. Thus, the use of power over ethernet (PoE) and cabling that is able to transmit both data and power through the use of a single cable is pivotal.

To ensure the cabling system can live up to its role, it is important to use verified cable, purchased from a manufacturer that is certified by a third-party approval partner. Approved cable benefits the end user and installer alike, as using high-quality approved product ensures

maximum transmission and reduces the likelihood of system failure.

Preparing for future data demand and technology innovation is likely to be a challenge for the structured cabling market. This highlights the importance of preparing for the future by optimising existing cabling systems and using superior, verified products.

Mark Froggatt
BASEC

Editor's comment

A useful reminder from Mark about the important role a high-quality network cabling infrastructure plays in ensuring that we can all take advantage of next generation technologies. Making sure that a chosen cabling system operates to the required standards, can offer a significant degree of future proofing and has been third-party tested to verify any performance claims is therefore advisable.

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Rate and review

With 2020 coming to a close, [Inside_Networks](#) has assembled a panel of industry experts to review the events of the last 12 months and suggest what 2021 might have in store

 No sooner had 2020 got into its stride then the coronavirus pandemic turned the world upside down. Its impact has been far reaching and companies across all areas of the enterprise and data centre network infrastructure sectors have had to navigate these choppy waters by being flexible, innovative and daring.

The pandemic has, however, shone a light on the important role that data centres play in our day-to-day lives. During lockdown there was a sharp rise in demand for streaming services, while working from home and video conferencing was only possible thanks to digital infrastructure. This huge surge in internet traffic has highlighted the need for enterprises to locate their services close to major urban areas where end users are located and, according to IDC, by 2023 over 50 per cent of new enterprise IT infrastructure

deployed will be at the edge.

Meanwhile, keeping those still working in offices safe and controlling the spread of infection has shifted the emphasis about what defines an intelligent building away from just energy efficiency and occupant comfort. With home working set to continue after the pandemic subsides, the long-term future of the corporate office is being questioned. Watch this space.

Throughout all the upheaval 5G, the internet of things (IoT), Wi-Fi 6 and machine to machine (M2M) communications continued to make an impact, and Inside_Networks has assembled a panel of experts to give us their thoughts and opinions on 2020 and predict what 2021 will have in store.

Don't forget, if you have a question that you would like answered [CLICK HERE](#) and we'll do our best to feature it.



WHAT HAVE BEEN THE MOST
SIGNIFICANT EVENTS WITHIN THE
ENTERPRISE AND DATA CENTRE
NETWORK INFRASTRUCTURE
SECTORS OVER THE LAST 12
MONTHS, AND WHAT DO YOU
THINK WILL BE THE KEY TALKING
POINTS DURING 2021?

RUSSELL POOLE

MANAGING DIRECTOR UK AT EQUINIX

In a year turned upside down by the coronavirus pandemic, we have seen an unprecedented acceleration in the global digital transformation journey. This has revealed a growing need for enterprises to enhance their interconnection capacity – the measure of private connectivity for the transfer of data between organisations – to overcome the challenges of the crisis and remain competitive in an increasingly digital economy.

Coronavirus has already had a dramatic effect on how businesses are planning their digital infrastructure initiatives. According to Equinix's fourth annual Global Interconnection Index (GXI), digital service providers – including those within telecommunications, cloud and IT services, content and digital media, and technology providers – are forecast to increase private connectivity bandwidth by up to five times by 2023.

Enterprises that have been able to support the shift towards more remote working will only require more connectivity. As a result, these businesses are expected to contribute to 54 per cent of the total interconnection bandwidth growth in EMEA over the next three years, outpacing other industries in the region.

Over the next year, the edge will play an even bigger role as enterprises extend their digital infrastructures from centralised to distributed locations. More traditional businesses, such as those within the banking and insurance, manufacturing, and business



and professional services sectors, are now moving their workloads to the digital edge to be closer to their users, while scaling up their core IT infrastructures. By 2023, these organisations are expected to reach a peak interconnection bandwidth annual growth rate of 50 per cent.

The pandemic's impact is acutely evident in the healthcare, life sciences, government and educational sectors. These are

predicted to lead traditional enterprises in interconnection growth rates, as artificial intelligence (AI) and machine learning (ML) are helping to ramp up the demand for interconnection bandwidth within these industries.

Digital leaders continue to plan for the post-pandemic recovery by implementing critical digital transformation initiatives to help navigate the journey ahead. It is crucial that businesses can employ innovative solutions to interconnect with their customers and partners in order to thrive in an increasingly dispersed environment.

'OVER THE NEXT YEAR, THE EDGE WILL PLAY AN EVEN BIGGER ROLE AS ENTERPRISES EXTEND THEIR DIGITAL INFRASTRUCTURE FROM CENTRALISED TO DISTRIBUTED LOCATIONS.'

The Deca¹⁰ Jack is retiring...





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EMMA FRYER

ASSOCIATE DIRECTOR DATA CENTRES AT TECHUK

I occupy that awkward space between UK data centre operators and government, and from my perspective 2020 has been a year of seismic events with far reaching implications.

Firstly, the sector's ability to protect business continuity was tested for real, and the result was a solid demonstration of resilience. Yes, that is what we are here for but the challenges were non-trivial. From March onwards, data centre service providers handled uplift in demand whilst overcoming operational issues ranging from supply uncertainties

to contractors discarding used personal protective equipment (PPE) in shared spaces. While we are not out of the woods, this was a heartening demonstration that the sector does indeed know how to manage risk.

The other event was a change in our relationship with government. Operators were well ahead of official edicts in implementing precautions against infection, but by March our biggest fear was that lockdown would compromise activity by preventing staff movement. Fervent negotiations with the Department for Digital, Culture, Media and Sport (DCMS) resulted in key worker status within 24 hours, a dedicated team established within a week and, subsequently, protection for construction sites and quarantine exemption. No flies on us – or them.

Now for the looking ahead bit. All this activity forced Whitehall to recognise

that there was a significant part of core digital infrastructure that they were largely unaware of. Should they intervene to ensure the sector was secure, resilient and

competitive? If so, what form should this intervention take? The DCMS team, expanded in September 2020, has been working closely with us to build an evidence base to inform future policy direction regarding UK data centres.

The most common question asked by operators and

external observers is whether the sector will be designated critical national infrastructure (CNI). In truth, a wholesale sector-wide designation is highly unlikely but CNI status is certainly being scrutinised and it is not unreasonable to expect some changes. For instance, more individual facilities being so classified, or less welcome proposals that the sector should be subjected to formal regulatory oversight. Those discussions alone look set to keep me busy for the majority of 2021.



'THE SECTOR'S ABILITY TO PROTECT BUSINESS CONTINUITY WAS TESTED FOR REAL, AND THE RESULT WAS A SOLID DEMONSTRATION OF RESILIENCE. YES, THAT IS WHAT WE ARE HERE FOR BUT THE CHALLENGES WERE NON-TRIVIAL.'



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MARTYN LEWIS

GENERAL MANAGER AT DUNASFERN INC AURIGA

Although the network infrastructure sector was never closed for business in the way that some others were, there was clearly a marked decline in activity during the initial few months of lockdown. This saw many of our key stakeholders making use of the government's furlough scheme. Along with an increased number of customer and manufacturer contacts remotely working, this created some logistical and communications challenges.

As we progressed through the second half of the year, while much of this activity decline was reversed, it is notable that many of our customers are now operating with reduced teams. As a distributor, the onus has been on us to support, as much as possible, those who have taken on new roles, responsibilities and projects.

While many were caught out by supply chain disruption, a strong stockholding allowed us to capitalise and win several orders on the back of on-shelf availability and reduced lead times. There has also been a marked increase in product country of origin and supply chain integrity, as customers have sought to mitigate risk.

For businesses built on face-to-face contact with customers, operating in a socially distanced world continues to pose challenges. Field based team members had to quickly adapt to maintaining and building

strong customer relationships using a mix of in-person and virtual contact.

We've seen huge upheaval within the distribution wing of our industry, with businesses being bought, sold, realigned and, sadly, even closing. As a result, many network infrastructure businesses have been reassessing whether their existing distributors continue to offer the right choice, price and service for their business needs. From my perspective, this situation has resulted in the opening of a record number of new accounts and a significant increase in

business with several key operators within the industry.

The changes outlined look set to continue into 2021. Although the new normal poses challenges for distributors, the need to future proof via new developments and upgrades to existing estates means there's a lot to be optimistic about as we head into the new year.



'ALTHOUGH THE NEW NORMAL POSES CHALLENGES FOR DISTRIBUTORS, THE NEED TO FUTURE PROOF VIA NEW DEVELOPMENTS AND UPGRADES TO EXISTING ESTATES MEANS THERE'S A LOT TO BE OPTIMISTIC ABOUT AS WE HEAD INTO THE NEW YEAR.'

STEVEN CARLINI

VP OF INNOVATION AND DATA CENTER AT SCHNEIDER ELECTRIC

The response to the coronavirus pandemic has had a major impact on the data centre and network infrastructure sectors. The increased demand for cloud and hosted services, spurred by the requirement for staff to work remotely and the need for access to resilient connectivity, meant there was also a need to build out high-speed network infrastructure to support this sudden transition to the edge. These events amplified the necessity for greater power continuity and IT performance, all while adding increased strain to congested networks and highlighting the need for localised edge compute.

Data centres experienced a massive surge in demand, which amplified the need for greater power continuity, efficiency and IT performance. Should operators lose visibility of business or mission critical assets, they were blind and this, coupled with the perennial shortage of trained IT staff, drove demand for both proper systems management and real time insights delivered via the cloud to enable better remote management.

As we look toward 2021, current challenges will continue to drive data centre and network demands. However, we'll see a shift in focus regarding the rollout of 5G capacity to provide faster fixed access to homes, as well as the deployment of next generation mobile applications.

As the volumes of data enabled by high-speed networking will need to be processed closer to their points of generation, we can

expect to see greater integration between existing edge applications and public health applications such as contact tracing. This may also be a feature of smart building management systems and public transport applications.

Furthermore, with greater focus on data sovereignty, ensuring that sensitive information is kept within local loops and on local hardware assets will become crucial. This, combined with edge compute to enable 5G, will accelerate edge deployments and further amplify the requirement to design systems in a way that is conducive to

greater energy efficiency, reliability and standardisation.

We also expect to see competition in the service provision space, with hyperscalers entering the carrier sector and, on the periphery, I anticipate we'll see SpaceX mobile applications, built on a network of low Earth orbit (LEO) satellites, begin to provide an alternative to fixed line optical fibre networks.

'AS THE VOLUMES OF DATA ENABLED BY HIGH-SPEED NETWORKING WILL NEED TO BE PROCESSED CLOSER TO THEIR POINTS OF GENERATION, WE CAN EXPECT TO SEE GREATER INTEGRATION BETWEEN EXISTING EDGE APPLICATIONS AND PUBLIC HEALTH APPLICATIONS SUCH AS CONTACT TRACING.'



MATTHIAS GERBER

MARKET MANAGER OFFICE CABLING AT R&M

Throughout 2020 bandwidth demands have driven a marked interest in OM5 optical fibre cabling. OM5 solutions enable data centre managers to introduce affordable multimode cabling without compromising on performance. Meanwhile, ribbon fibre is helping with demand in colocation and hyperscale data centres. Slimmer than traditional fibre, ribbon cables help network operators multiply the number of fibres in ducts, while using the same size fibres throughout (250µm or 200µm) simplifies and speeds up splicing.

There's much interesting debate on private cloud versus corporate data centre. Outsourcing data centre services to a purpose built facility offers efficiency, reliability, security, cost and ecosystem advantages. However, this requires meticulous step-by-step planning.

Data centre infrastructure management (DCIM) is becoming accessible for colocation providers, reducing maintenance costs and downtime and supporting everything from basic network documentation to extensive asset management. New solutions include expert systems for the planning and extension of data centres based on the digital twin concept, as well as brownfield adaptations to existing infrastructures.

Monitoring LAN rack equipment with sensor capabilities is becoming more important, as increasingly complex corporate data centres and LANs are regarded as critical infrastructure.

Furthermore, density requirements are driving developments such as SN, MDC and CS connectors, which can boost remote edge data centre capacity.

Wireless access point bandwidth requirements will pass the 10Gb/s barrier with the second wave of Wi-Fi 6. Development of 25Gb/s network equipment has started to support this and Cat.8 will have to be considered for wireless access points in LAN environments.

2020 saw interesting standardisation developments. The ISO/IEC TR 11801-9909 standard was published,

Single Pair Ethernet (SPE) connectivity was standardised, and the IEEE 802.3cg standard for 10BASE-T1 SPE was finalised and hardware development started.

LAN cabling for distributed building services (DBS) ISO/IEC 11801-6 is becoming increasingly accepted. Uptake of digital ceiling zone cabling and LAN cabling for building automation will continue to grow and fieldbus systems will be increasingly replaced by Ethernet. SPE is supplementing digital ceiling concepts and accelerating the move of IP towards the sensor/actuator level. In Industrial Ethernet and building automation, SPE is expected to take over a huge portion of the applications from existing fieldbus systems.



'THROUGHOUT 2020 BANDWIDTH DEMANDS HAVE DRIVEN A MARKED INTEREST IN OM5 OPTICAL FIBRE CABLING.'

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Connectivity compliant to IP68, with interfaces containing up to 24 fibers and options to include optical components for Passive Optical Network and WDM applications, the simple “push-pull” Q-ODC connection simplifies installation in the most challenging of environments.

Find out more by reading our article on pages 46 - 49.

ANDREW STEVENS

CEO AT CNET TRAINING

2020 – the year of the data centre. The coronavirus pandemic has shone a light on the industry in a way no marketing campaign ever could. With more people going online to stay connected, the demand for data centres has never been greater.

More people are aware of the industry, those working in it have been granted key worker status and people are starting to understand what data centres are and how much we rely on them every day.

Skills are very much on the agenda, however, people are still only talking about the subject. We are in a phase of superficial remedies and filling conference agendas with the topic, and the industry is

yet to put anything in place that is long-term and meaningful. In 2020 the EU Code of Conduct and Uptime Institute both highlighted the importance of qualified individuals, as well as training and development. Human risk is still a significant factor when it comes to outages – the majority of which could be prevented with better quality and more targeted training plans in place.

Will 2021 be the year the industry really starts to address the skills crisis and stop just talking about it? It needs to change the way it recruits people, as it's not working. Organisations need to stop thinking that this industry is special and that their dream

skilled candidates are out there just waiting to discover it. Job advertisements need to stop asking for a minimum of five years of experience, as that talent pool isn't there. If the industry doesn't start to make changes,

things will only stay the same.

Network infrastructure continues to gain more recognition and the Electrotechnical Certification Scheme (ECS) has put a new framework in place to benchmark new entrants and professionals already working in the industry. Furthermore, network cabling apprenticeships came to life this

year after five years in development and this is a trend that will continue beyond 2021, as more people look to find viable jobs and retrain across different industries.



'SKILLS ARE VERY MUCH ON THE AGENDA, HOWEVER, PEOPLE ARE STILL ONLY TALKING ABOUT THE SUBJECT. WE ARE IN A PHASE OF SUPERFICIAL REMEDIES AND FILLING CONFERENCE AGENDAS WITH THE TOPIC, AND THE INDUSTRY IS YET TO PUT ANYTHING IN PLACE THAT IS LONG-TERM AND MEANINGFUL.'

JOHN LABAN

RESET CATALYST AT THE OCP FOUNDATION & OPENUK BOARD MEMBER

The topic that sticks out for me in 2020 is Scope-3 CO2 emissions because its implications will have a huge impact on the global data centre industry and the information transport systems sector during this decade.

You may have missed it if you didn't listen to the president of the European Commission, Ursula von der Leyen, speaking at Davos in January 2020 and the major speech in the European Parliament that launched the European Green Deal. During her Davos keynote, von der Leyen spoke about the European Union (EU) Border Carbon Tax, which applies to a product's embodied CO2 emissions. This is Scope-3 CO2 emissions.

Possibly the greatest economist of the 20th century, John Maynard-Keynes, once said, 'Practical business men who believe themselves to be quite exempt from any intellectual influence, are usually the slaves of some defunct economist.' To help put this quote into context, the foundation of the European Green Deal is the embedded economy model, something that Kate Raworth talks about in her book, Doughnut

Economics.

During this decade we shall all become slaves to this 21st century economic model

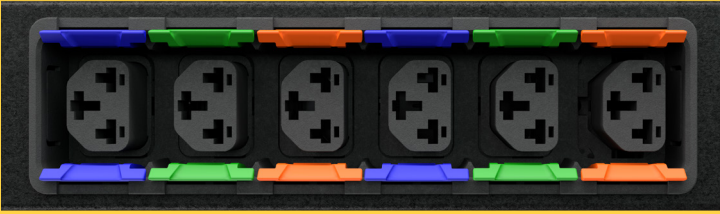
because it will force all of us to focus our attention on the open source technology Collaborative Commons, which sits at the core of the embedded economy model. Scope-3 CO2 emissions and the circular economy of ICT hardware and data centres is tucked away in the kernel of the 21st century embedded

economy model.

If you haven't made the connection yet between open source ICT hardware and the circular economy then let me put it this way – open source vanity free hardware is the well-rotted horse manure that allows the circular economy to grow and thrive.



'SCOPE-3 CO2 EMISSIONS AND THE CIRCULAR ECONOMY OF ICT HARDWARE AND DATA CENTRES IS TUCKED AWAY IN THE KERNEL OF THE 21ST CENTURY EMBEDDED ECONOMY MODEL.'



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Ideal Networks appoints Neil Gaydon as chairman and Mike Grindele as new VP of sales for North America

Ideal Networks has appointed Neil Gaydon as chairman and Mike Grindele as new vice president (VP) of sales for North America.

Gaydon joins with 40 years' experience in the technology sector with board level leadership, having previously held notable roles at Pace and Smart Technologies. He attended Harvard Business School and has been the recipient of numerous business awards during his time spent living and working in the UK and North America.

Grindele began his career in IT with Electronic



Mike Grindele



Neil Gaydon

Data Systems (EDS) in the 1990s, before moving to a role that involved selling network test equipment and providing support directly to customers. He then spent more than 19 years with Fluke Networks, leading the sales and operations teams as area VP North America.

Paul Walsh, Ideal Networks' CEO, said, 'We are committed to continued innovation and transforming the way that our global customers work with exceptional solutions and products. Neil's passion and expertise will support this, while Mike brings a huge amount of industry experience that we are confident will benefit our business and customers alike.'

R&M opens production plant for network technology in China

R&M has opened a new production plant in China. Located in the Pinghu Economic Development Zone (PEDZ), it produces optical fibre and copper solutions for data networks.

R&M now has two plants in China since its takeover in 2019 of Durack Intelligent Electric Co in the Jinshan District. Both sites supply the IT market in China and other Asian countries, with main customers being data centres, which R&M serves as a full range supplier of network infrastructure solutions.

The PEDZ business park is a perfect environment for international technology companies, a fact confirmed by the 1,000 organisations that are based there. R&M

is located in a new, six-story industrial building and, in addition to production and packaging, it houses a warehouse, a showroom and offices on an area totalling 4,700m². In the months to come, over 100 new jobs will be created.



Colt DCS welcomes new director of energy and sustainability

Colt Data Centre Services (DCS) has appointed Scott Balloch as its new director of energy and sustainability. This comes as Colt DCS continues to ramp up its commitment to energy efficiency, making sustainability a key strategic driver for its global operations.

As part of his role, Balloch will spearhead Colt DCS' global energy and sustainability strategy. He will play a key part in ensuring sustainability is a priority focus for the business and ensuring the overall goals for the business are achieved. Some of the key initiatives people can expect from Colt DCS include setting global science based

targets for carbon reduction, and taking strong action on renewable power supplies and waste.



Scott Balloch

Balloch commented, 'Hyperscale data centres are a rapidly growing and extremely exciting industry sector. For me, now is the key inflection point to drive sustainability and carbon reduction as a strategic driver in the inevitable growth in this sector. It's the

right time to be doing this – the Colt DCS senior leadership team are extremely supportive and I feel other firms will quickly follow our lead.'

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Joint initiative from



Mike Starbuck joins Burns & McDonnell to lead European initiatives

Burns & McDonnell has hired Mike Starbuck to launch and lead the company's data centre services from the UK. Based in London, the new business practice will be focused on data centre design consultancy for clients across Europe.

Starbuck will lead a new team, supporting the multidiscipline design and consultancy needs of data centres and other mission critical facilities. His experience includes 30 years supporting some of the world's largest technology and data centre companies, and he joins Burns &



McDonnell from a global engineering firm, where he spent 12 years as technical director.

Starbuck said, 'I'm looking forward to leveraging my experience to establish and grow the practice in London. I'm determined that we will build on the company's success by hiring the best people and leveraging our

global expertise to provide a high-quality service and boost our growth.'

Mayflex recruits Ross Higham as director of sales infrastructure

Mayflex has appointed Ross Higham as director of sales infrastructure. He joins the team from Corning Optical Communications, where he carried out both UK and EMEA sales management roles. In this new position he will be responsible for leading and supporting Mayflex's national field sales team in the growth and development of the Excel Networking Solutions brand and associated products.

Higham commented, 'I'm delighted to have this opportunity to work with the Mayflex team. My experience and knowledge perfectly suit this role and I'm

really excited to develop on what is already a very successful division and business. It is

a great opportunity and I look forward to pushing the business to new heights.'

Andrew Percival, Mayflex's managing director, commented, 'Apart from the internal confusion of having two people called Ross in the team, this is great news! Joking aside, I extend a warm welcome to Ross

and wish him the very best of luck – we are extremely pleased to have him on board.'



CHANNEL UPDATE IN BRIEF

Citrix has appointed Mike Tankard as partner director northern Europe.

Huber+Suhner has been recognised with the Bronze Performance Standard Supply Chains for the 21st Century (SC21) award by ADS for its commitment towards technical excellence and the continual improvement of its production performance.

Riverbed has promoted Sekhar Kancherlapalli to chief information officer.

Cloud Technology Solutions (CTS) has hired Chris Bunch as chief operating officer (COO) and promoted Tom Ray to managing director.

TelcoSwitch has appointed Eddie Buxton as chairman of its board.

Calteq has been awarded Excel Cabling Partner status. The company is now recognised as an experienced provider of design, installation and testing services for Excel Networking Solutions, and can provide all installations with a comprehensive 25-year warranty for copper, optical fibre and voice.

Andy Young has joined Asperitas as director of research and development.

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Inside Networks

2021 CHARITY GOLF DAY 26TH MAY

An opportunity to compete and entertain clients and colleagues at the superb Marriott Hanbury Manor Hotel & Country Club.

www.marriottgolf.co.uk/club/hanbury-manor

Indoor Simulator Competition

The cost of a 4-ball team will be £595 (+VAT).

There will also be discounted accommodation at Hanbury Manor Hotel & Country Club, which will include breakfast and use of the extensive leisure facilities. Price to be confirmed.

As in previous years – teams will be asked to provide a raffle/auction prize on the day in support of the charity.

Organised by:

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Playing the Hanbury Manor PGA Championship Course:

This prestigious golf course was the first to be designed by Jack Nicklaus II and still incorporates features from an earlier 9-hole course designed by the great Harry Vardon. The course is now widely recognised as one of the best in England.

The event will ask for 4-ball teams to compete in a 'best 2 from 4' full handicap Stableford competition over 18 holes (with a 2-tee start from 10:30am).

Live Scoring sponsorship is available.

Golf will be preceded by tea, coffee and bacon rolls at registration and will be followed by a 3-course private dinner and prize giving with charity raffle.

There will also be opportunities for sponsorship of all aspects of the day – all raising money for Macmillan Cancer Support – since 2005 this industry event has raised over £78,500 through our charity golf events!

Supporting:

**WE ARE
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Overcoming productivity problems

▶ With productivity so important, in 2020 IDEAL Networks conducted research into how the right certifier can increase productivity. The survey asked IDEAL Networks LanTEK IV Cable Certifier users what increase in productivity they have experienced compared to their previous certifier, and why.

Testing time

Saving time on each test is critical for enhancing efficiency. This is especially true for cable installers, as two people must wait for each test to be completed, and when you have hundreds or thousands of links to test every extra second quickly adds up. Therefore, it is no surprise that 74 per cent of respondents to the survey found that the seven second test time for Category 6A possible with LanTEK IV has a high or very high impact on their productivity.

Of course, test time varies depending on the class or category of cable being tested and measurements included, so it is important to understand these differences. However, if we consider that the average technician installs 10,000 links per year, those switching from some certifiers could save 56 hours of labour per year in

Research by IDEAL Networks has identified the challenges installation companies face when certifying cable and what would help to overcome them. In short, installers want to save time, solve problems, improve collaboration and increase productivity – ultimately equating to saving money and adding to the bottom line

test time alone (based on two people testing). With an average of 13 technicians or six teams employed when testing, this could equate to 336 hours saved across the business – the equivalent of having an extra technician for more than two months every year, simply by using LanTEK IV.

New ways of working

Another factor contributing to increased productivity when switching to LanTEK IV is the use of VisiLINQ permanent link adaptors. Unique to IDEAL Networks, they feature a





switch and a status indicator light at the end of the permanent link adaptor, making it faster and easier to test cabling. 64 per cent of survey respondents stated that using VisiLINQ has a high or very high impact on their productivity.

In addition, the IDEAL AnyWARE Cloud test management system supports productivity for LanTEK IV users with customisable test and job data functions. This can decrease the time and steps needed to create projects and test IDs. Users fed back that side by side comparisons also proved simpler and that data entry was faster, saving time before testing begins. 59 per cent of customers said that IDEAL AnyWARE Cloud has a high or very high impact on their productivity.

Reducing errors

55 per cent of respondents agreed that the pre-configuration features of IDEAL AnyWARE Cloud had a high or very high impact on their productivity. It enables project managers to pre-configure all project information in the IDEAL AnyWARE Cloud, ready for field technicians to download the project to a LanTEK IV.

It ensures consistency, eliminating mistakes from manual data entry, reducing the chance of having to return to the job site to re-test. Plus, the process makes it easier and faster for technicians. If there are issues



on-site, this innovative functionality enables project managers, cable manufacturers or IDEAL Networks' technical support engineers to remotely access the tester to provide support and resolve troubleshooting issues.

Team Viewer users also stated that being able to collaborate and resolve issues as if they are all on-site together brings big productivity benefits. 40 per cent of respondents said Team Viewer had a high or very high impact on their productivity.

Productivity gains

The exact productivity gains from switching to LanTEK IV will always vary depending on the business. However, the survey confirms that the LanTEK IV cable certifier and IDEAL AnyWARE Cloud provide improved ways of working that save time, solve problems, increase collaboration and, above all, significantly boost productivity.

For more information **[CLICK HERE.](#)**

www.idealnetworks.net



Audit | Design | Build | Test | Maintain



One step beyond

Cindy Ryborz and Carlos Mora of Corning Optical Communications take a look at next generation data centre connectivity

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▶ The data centre industry is experiencing unprecedented growth and innovation as new players, new business models and new technologies converge. Despite a slowdown in 2020, Gartner projects that spending on global data centre infrastructure will reach \$200bn in 2021 and grow year on year through to 2024.

PUMP UP THE VOLUME

Driving this growth is a need to support the ever more rapid and seamless transition of data, with technologies like 5G and the applications it supports requiring huge volumes of data to be processed, analysed and stored. This will see a need to not only

invest in faster transceiver technology, future ready physical infrastructure, cabling and connectivity but also simplify network architectures, which have become more and more complex over time.

Fibre optic connectors will play an important role in this transition and the past few decades have seen the arrival of a diverse range of connector types, with some developed to support the scalability of data centres as they have grown to reach 40Gb/s and 100Gb/s. From the range of connectors released to the market within the last 30 years, there are two interfaces – the LC duplex and MPO/MTP – which have made their way into the standards for data centres.

‘As data centre operators search for modern ways to achieve faster, greater and more powerful data rates like 400Gb/s, they must look at even higher-density connectivity and ways to simplify network design with breakout options.’

AIMING HIGH

What is fit for purpose today can quickly change as the industry moves forward and new architectures emerge. As data centre operators search for modern ways to achieve faster, greater and more powerful data rates like 400Gb/s, they must look at even higher-density connectivity and ways to simplify network design with breakout options.

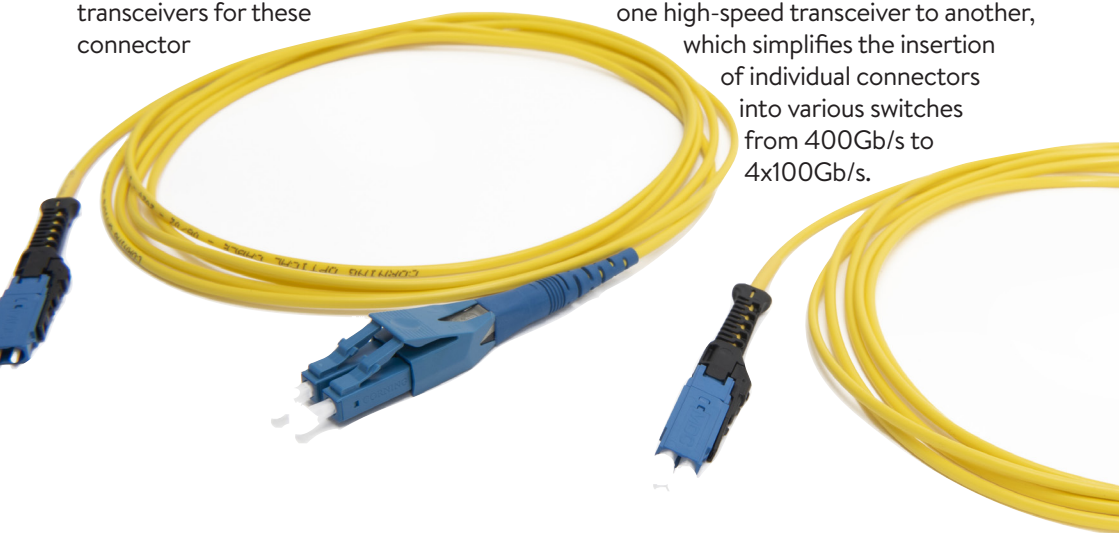
Beyond the readily available form factors, the market is meeting this need by introducing new connectors that are categorised as very small form factor connectors (VSFFC), such as the Senko Nano (SN) and US Conec Mini Duplex Connector (MDC). As of yet, equipment manufacturers have not released transceivers for these connector

interfaces but they are expected to announce availability within the next couple of years.

WHAT DOES THIS MEAN?

From tenants in colocation data centres to users that are reaching capacity in their own facilities, achieving greater density and preparing for future requirements is increasingly key. Even though today you may not need to implement 400Gb/s in your data centre, increasing density in the main distribution area (MDA) is always valuable and future demands from new applications or services may consume the bandwidth available.

MDC and SN connector formats promise the possibility of connecting directly from one high-speed transceiver to another, which simplifies the insertion of individual connectors into various switches from 400Gb/s to 4x100Gb/s.



In addition, up to three MDC or SN connectors fit into the footprint of an LC duplex, which provides an enormous density advantage.

RACE FOR SPACE

For operators struggling with reduced space in their data centres, implementing LC duplex connectivity with LC to MDC patch cords and compatible hardware is an effective approach. This will not only allow the LC duplex footprint to be retained at the transceiver end but the port density with MDC in modules or cassettes of the same size can also be increased up to three times – imagine the possibility of having 432 instead of 144 fibres in one rack unit.

VSFFCs also help to lower total cost of ownership. Optical component manufacturers are already starting to offer solutions with these connectors, but it is important to find the best cabling infrastructure solution that also allows for continued use or reuse of existing components. This, in turn, helps to minimise the initial investment while meeting future scalability requirements.

PLUGGED IN

Beyond the SN and MDC, the Corning/Senko (CS) duplex represents another option in the VSFF space. It's

important to note that although the three types all contain two fibres, they have many differences in design and functionality.



This includes size, as well as the vertical/horizontal orientation of the fibre. The SN and MDC can also be ganged together as a 4x2 fibre connector, which the CS cannot do. Given these variances, the CS, MDC and SN receptacles are not compatible and this has an effect on the optical transceiver socket that will be needed, and also the passive connectivity components.

The industry will see a variety of technological advances to help achieve higher data rates – from 40Gb/s to 100Gb/s to 400Gb/s and all the way up to 1.6Tb/s. The use of pluggable optics may play an important role up to 800Gb/s and it is to be expected that certain future developments will use some of the form factors already mentioned. However, for 1.6Tb/s, the high-density and power consumption requirements mean that pluggable optics might not be the best solution.

LEADER OF THE PACK

When it comes to these higher data rates, there is another way – namely the co-packaged solution. Here, data transmission and data processing are coupled in semiconductor components, as Intel has demonstrated with a recently published co-packaged Ethernet switch. By doing this, co-packaged optics will increase density, reduce latency, reduce the power consumption and reduce the size of the switches.

Reaching these data rates will mean going above and beyond the current SFF connectors previously mentioned. Further developments can be expected in the expanded beam area, resulting in more applications with connectors such as the US Conec MXC connector or the 3M EBO. New developments such as multicore fibre (MCF) and reduced cladding fibre

will also have a tangible impact on further connector developments.

PREPARATION IS KEY

The perennial challenge for data centre operators is to ensure that that networking and structured cabling design remains flexible to minimise cabling infrastructure costs when the time to upgrade to higher

speeds arrives. Careful planning and preparation will avoid costly upgrades and changes in footprint further down the line, with increasingly compact connectors and fibre management a vital component to building 400Gb/s networks that can serve high volume telecommunications providers, enterprises and hyperscale data centres. ■



CINDY RYBORZ

Cindy Ryborz is marketing manager data centre EMEA for Corning Optical Communications. Starting her Corning career with the customer care group in 2008, she joined the marketing team in 2012 and took on the execution of Corning's local area networks (LAN) strategy across the EMEA region. She moved into the strategic marketing manager role for IBN/LAN in 2016 and data centre marketing manager in the regional marketing team in 2018.



CARLOS MORA

Carlos Mora is data centre market development manager EMEA for Corning Optical Communications. Mora joined the market development team in April 2019 to lead activities in the data centre environment. With a background in project management, engineering, sales and an MBA from the European School of Management and Technology (ESMT) in Germany, he has more than 10 years of experience working with different multinational companies.



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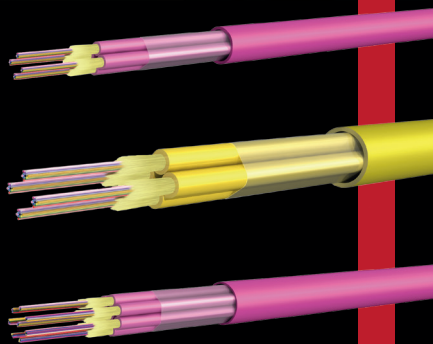
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OptiPack Breakout
Fibre Cable

Nexans

Data centre managers who are preparing to introduce 100Gb/s in their core networks must be aware of a reduction in optical budgets in IEEE's standard for the second generation of 100 Gigabit Ethernet – 100GBASE-SR4.

This new standard allocates only 1.9dB channel attenuation with a reach of 100m. With normal off the shelf cabling products data centre managers and designers face limitations when designing new facilities, or upgrading existing ones, to next generation speeds.

Nexans has introduced its Ultra Low



Loss solutions with performance that guarantees up to six MTP Ultra Low Loss connections in a channel and maintains a reach of 100m. Years of production experience with the MTP connector has resulted in tighter control on the insertion loss limits of ENSPACE pre-terms and modules, which are now equipped with Ultra Low Loss performance.

CLICK HERE for more information.
www.nexans.co.uk/LANsystems

Draka/Prysmian

Draka, a brand of Prysmian Group, has launched a new and improved range of connectivity products for use with its copper Draka Universal Cabling System. The Draka Category 5e and Category 6 unshielded copper range has been completely updated for increased quality and performance, with several features for quick and simple installation.

All panels, keystones and modules feature both LSA+ and 110 punch down, whilst Euro and LJ6C modules now come with top and bottom cable fixing points. Vertical and horizontal panels benefit from increased robustness, with the vertical panel now including a metal rear cable



management bar. The Euro and LJ6C modules IDC terminal have a coloured T568A/B wiremap. Each connectivity product comes with all the accessories required to complete its installation.

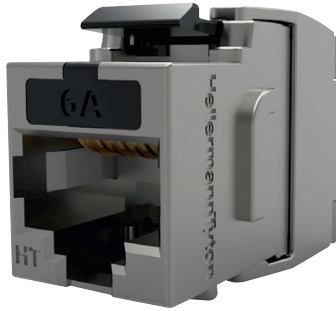
The packaging also benefits from a completely new look and has been designed to be environmentally conscious by being plastic free. Products are now housed in boxes manufactured with recycled materials and water based inks are used for printing. The boxes are 100 per cent reusable and can be readily recycled.

To find out more about Draka's Universal Cabling System **CLICK HERE**.
mms.drakauk.com

HellermannTyton

HellermannTyton has launched a brand new Category 6A Keystone Jack to its portfolio of quality data network products. The all new HTC Series Category 6A Shielded Keystone Jack has been designed to support today's network infrastructure requirements and the increasing demands on high-speed data.

The Category 6A Keystone Jack's 360° shielding prevents alien crosstalk and helps to dissipate the heat produced by power over Ethernet (PoE) applications. Its short body allows for use in more restrictive areas of an installation, while the tool free design allows for fast



on-site installation without the need for any specialised termination tool.

To support the Category 6A Keystone Jack, HellermannTyton will also launch a new 1U 24 port modular patch panel. Compatible with the Category 6A Keystone Jack, it has been designed for fast and easy installation and features a folding rear cable manager bar, removing the need for additional tools during install.

Both products come in 100 per cent recyclable packaging to reduce any environmental impact from waste materials.

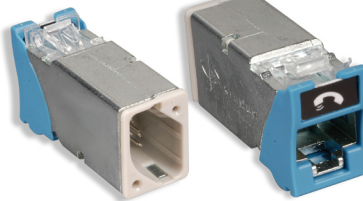
To find out more [CLICK HERE](http://www.htdata.co.uk).
www.htdata.co.uk

Siemon

Siemon's Category 6A outlets and plugs provide best in class performance, exceed all standards requirements, and provide unparalleled usability and the industry's fastest termination.

The intuitive design of Siemon's Z-MAX outlet optimises each step of the termination process in order to eliminate errors that lead to delays and rework. Thanks to the zero cross termination module and Siemon's Z-TOOL, Z-MAX enables termination times of under 60 seconds for both shielded and UTP connectors.

For best support in the most challenging spaces, Z-MAX 45 features a shorter outlet body with 45° termination. It reduces depth by 40 per cent to accommodate



shallow back boxes without exceeding the cable bend radius, while the 45° angle enables side stacking for high density applications.

Siemon's Z-PLUG Category 6A Field Terminated Plug facilitates the seamless connection of lights, wireless access points, security cameras, audiovisual equipment, as well distributed antenna systems and building automation systems to a network. It enables custom length cables that can be terminated on-site for quick connections directly to the end device. Z-PLUG can be terminated to shielded, unshielded, solid and stranded cables.

For more information [CLICK HERE](http://www.siemon.com).
www.siemon.com

A tough act to follow

Against a backdrop of record investment in building fibre to the home (FTTH) infrastructures and the need for the optical edge to meet additional demands, Jonathan Lewis of Huber+Suhner explores the developing market in harsh environment connectivity

▶ Harsh environment connectivity, whilst not a new concept, is increasingly popular in specific segments of the optical fibre networks market. Traditional external optical fibre cabling networks are not new, and are certainly well known and understood by many, so why is this product type becoming more popular?

THREE OF A KIND

It was inevitable that the hottest industry buzzword would make an appearance, so let's start by understanding what this latest generation of mobile technology has to do with harsh environment connectivity. Where previous generations have focused on a relatively simple increase in bandwidth, 5G adds in another set of objectives to ensure it can cope with the demand in the next iteration of technology. These demands fall into three main categories and providing an access network infrastructure to support all of them is where we see the benefits of harsh environment connectivity.

What we are sold today as 5G is really only a third of the 5G story, which is known as 5G enhanced mobile broadband (eMBB). It is enhanced because its bandwidth is characterised up to 10Gb/s, allows handover between cells at speeds of up to 500Km/h and can support a total capacity of 10Tb/s per km². Basically it's a 'bigger

pipe', or probably better analogised as 4G++++.

The second category is that of massive machine type communications (mMTC), which uses the second buzzword of the article, the internet of things (IoT), where the network requirement is to support up to 1,000,000 individual devices per km². The third category that makes up this trio of trickiness is that of ultra reliable low latency connection (uRLLC), which is in support of, amongst other mobile applications, autonomous vehicles. It is characterised (for good reason) to provide >1ms latency, <10x10⁻⁵/ms (which translates to 99.999 per cent reliability) and the same 500Km/h cell handover.

THINK ABOUT IT

Any optical access provider and/or ISP worth its salt is considering the future implications of bringing 5G provision into its network and the likely technologies it will use. This is underlined with the belief that the world is going to need a greater density of well provisioned fibre connections for multiple applications in the near future, should we stand any chance of our technology aspirations being realised. If they aren't going through this thought process then they might wish to start now.





Addressing even the relatively simple nature of 4G has resulted in a significant reduction in the use of microwave backhaul between cell towers – the mantra now being to ‘get it in the ground’ as quickly as possible via optical fibre. The general belief, if not based on absolute certainty but likelihood, is that to satisfy the three key demands of any 5G network there will need to be more optical fibre, covering a mesh of locations, in greater density than ever before. Macro cells (towers) are less critical to this coverage overall, and the addition of small cells in large numbers is seen as fundamental to that success.

HOME HELP

Moving back into the world of residential broadband, we are all now painfully aware that we rely heavily on access networks, but many of us find them wanting. There

are a number of initiatives across Europe to provide truly high-speed internet access, which from a fixed infrastructure perspective will mean a greater use of optical fibre closer to the point of delivery.

Having established that the future looks fibre filled, how do providers plan and provision for it? One answer is to stick with tradition, dig trenches, lay duct and fibre and splice from central office to the home or point of delivery. Whilst this might be ideal for some areas, and is certainly the safe option, it can become prohibitively expensive to both lay and then to make the final connections to the home, where speed and simplicity of connection are key drivers of the network design.

You also have the time-lag from the point of installation to when the service is actually ordered or needed, so minimising the network build to this point, plus

making it simple for the final connection, is the point at which subsidised build funding can be triggered. This is the sweet spot for harsh environment connectivity, proven in mobile macro sites across the world and preferred because of its simplicity to rig, and ruggedness in the face of any climatic conditions the world can throw at it.

DEFINING MOMENT

Harsh environment connectivity can be split into three distinct units – the feeder cable, the enclosure and the drop cable system. The heart of any harsh environment connectivity system though is the connector itself.

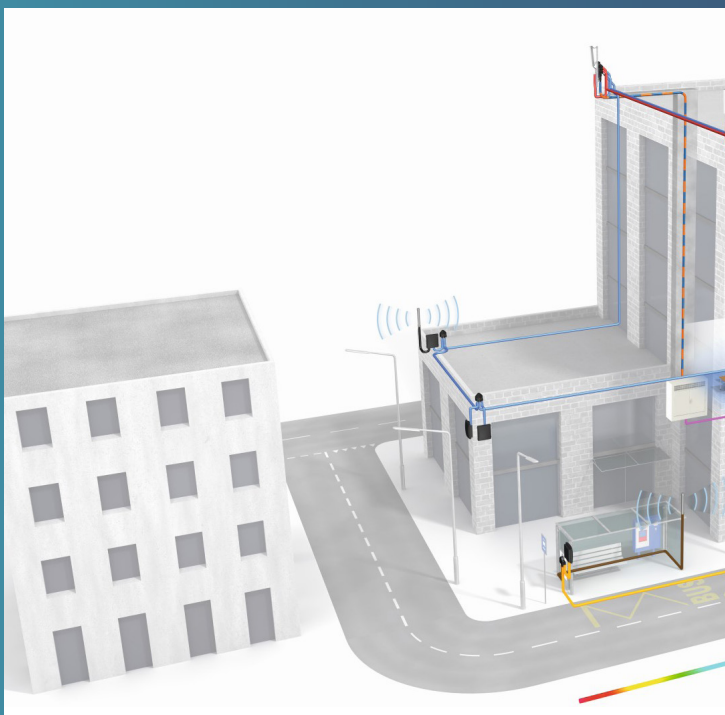
Encapsulating an optical connection (or connections) is not a simple operation and, particularly in the case of underground installations, can often need to survive for extended timescales fully submerged through the freeze/thaw cycle. Overhead is equally tough, with greater temperature extremes and winter icing to contend with. What it is good at, however, is its speed of installation and commissioning.

Typically, the enclosures used to house connectors

‘Harsh environment connectivity can be split into three distinct units – the feeder cable, the enclosure and the drop cable system. The heart of any harsh environment connectivity system though is the connector itself.’

can contain anything from 4-24 individual connectors/connections, and are themselves environmentally hardened. A tail cable, pre-terminated or connectorised, feeds the enclosure and can be made suitably resistant to the demands of a ducted, direct buried or overhead deployment quite simply. The process of

installation can also be simplified by using a daisy chain idea, where fibres are dropped in enclosures, often with the ability to be optically split (for xPON deployment), or passively filtered via wavelength division

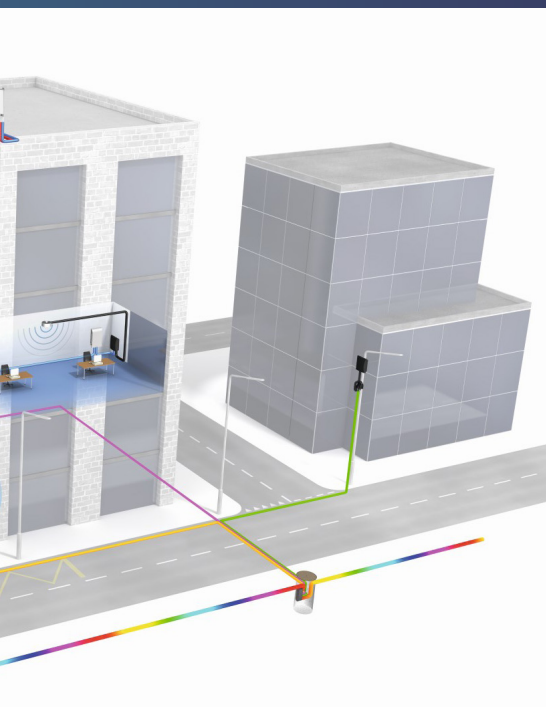


multiplexing (WDM) to drop individual wavelengths should the need arise.

HOW DO THEY PERFORM?

From an optical performance perspective, these connectors typically exhibit loss characteristics closely related to that of the conventional connector design on which they were based and form the core optical connection. In most cases these are LC or SC – both proven and reliable interfaces.

The characteristics and quantities of any connections and passive equipment will need to be optically budgeted for, but this is performed as a matter of course in any access network. Working at height, underground and in bad weather all contribute to the requirement for simplicity in the method of connection – the simpler and more intuitive the better.



VERSATILE AND ADAPTABLE

As you might gather, this system architecture is almost infinitely flexible, can be adapted to provide many types of services and expanded without tooling to add capacity. It also demands less in the way of field expertise and equipment to provide final drops when connecting subscribers – an obvious cost saving. Being factory terminated, you are also assured of the performance and cleanliness of the interface, and that extensive ingress protection and temperature cycling tests prove the longevity of components. Harsh environment connectivity has definitely proven itself a worthy link in the network chain to serve our technological needs for many years to come. ■



JONATHAN LEWIS

Jonathan Lewis is a technical account manager for Huber+Suhner. He is also a director of the Fibreoptic Industry Association (FIA), which provides specialist information and support to its members.

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Multi-Tenant Data Centres and Sustainability is report from **Schneider Electric** and **451 Research** that that uncovers how operators have faced their environmental challenges. **CLICK HERE** to download a copy.

When To Consider Category 6A For Offices? is the question answered in a blog by Nancy De Clerck of **Nexans**.

CLICK HERE to read it.

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What Does It Take to Commission a New Server Room or Data Centre? is the title of a blog by Lee Kelly of **Critical Power Supplies**.
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The Competition Surrounding 800 Gigabit Ethernet is a blog from Blanca Ruiz of **R&M**.
[CLICK HERE](#) to read it.



Taking care of business

Colin Parker of EDP Europe explains how a correctly managed structured cabling system can increase uptime and scalability while, at the same time, lowering operating expenses and reducing a data centre's technology footprint

 Interconnected data centres form the backbone of the digital economy. Whether for the delivery of digital services in support of critical national infrastructure, financial institutions, large or small businesses, or to simply entertain us, reliable and resilient communication to, from and between data centres has never been more important.

MEETING POINT

The point at which a data centre connects with the outside world is in its meet-me room (MMR) – a physical area that provides a connection to the outside world. It is a secure, 24/7 space where external carrier services are made available to the rest of the facility. In smaller data centres, the MMR may be little more than a demarcation point, although it can be large enough to house cages for many different telco carriers. Redundancies will be in place according to each data centre's requirement, and sometimes a duplicate MMR may even exist.

MMRs offer advantages for both network carriers and the data centre operator:

- Carriers can offer services that take advantage of the data centre infrastructure, without needing access to the highly secure areas inside.
- In multi-tenant data centres the facility is much more attractive to potential customers. The MMR allows total control

over the data centre environment, ensuring the same levels of security and continuity for the whole installation. In addition, it offers a wide choice of service providers to customers, with very low risk exposure for the client's space and internal network.

MANAGEMENT DECISION

Within an MMR, cable densities are typically high. It therefore requires the use of well managed main distribution frames (MDF) for transitioning external carrier connections to the internal backbone cabling of the facility and, ultimately, the customer's IT space in multi-tenant, enterprise or on-premise data centres.

An MDF can consist of optical distribution frames (ODFs), cabling distribution racks (CDRs), 19-inch cabinets or other similar enclosures. Each of these solutions offers varying levels of port density and their adoption will depend on each customer's individual requirements.

Key to successfully managing the ongoing requirements of a data centre to make cross connects is a fibre management system (FMS). This provides high-density inbound connection densities coupled with practical and efficient cable management. Every day, data centres are subject to changes in connectivity mapping and the MDF design should allow for these changes to be executed quickly and seamlessly during the data centre's lifecycle.



LIGHT WORK

Leading ODF or CDR fibre management systems can accommodate up to 3,240 fibres using LC connectivity, or nearly 26,000 fibres if using MTP technology. CDRs with shallow depths of 300mm and front access designs enable users to site main cross connects against walls or back to back – therefore achieving maximum packing densities on a smaller footprint within MMRs.

The CDR is the most flexible and scalable fibre management system on the market. Typically, tray units and fibre trays can be used like building blocks to create high-density systems from smaller, more scalable sub-segments. Different fibre performances, connectivity types and applications can be mixed and matched in the same rack, so that the overall solution can evolve at the same pace as the data centre.

Integrated cable service loops within

CDRs facilitate anytime access to all cables and connectivity. With an innovative side-facing design, rear and front connections can be accessed quickly and intuitively without any risk to pre-installed fibres. The integrated cable management system is easy to follow and allows users to add or remove cables during the lifecycle of the product.

STRIKE A CORD

Managing thousands of fibres in a single rack is virtually impossible without dedicated patch cord management. Leading CDRs are supplied with this feature fully integrated from the start, so that installers can safely route and manage patch cord slack. Furthermore, integrated management reduces the quantity of different length patch cords required to make connections. Often, only two different length cords are required to connect any of the ports.

Fibre trays inside the rack are normally coloured for immediate identification and clear labelling on the front of the fibre tray allows users to locate connections in seconds. These features help to reduce installation and serving

times, and have a significant impact on the operational costs of the data centre.

MIX IT UP

ODFs and CDRs from leading manufacturers offer the flexibility to mix and match cable types and connectivity. Spliced, patch or pre-terminated MTP trays can be mixed together within the same rack, as can singlemode and multimode fibres. This offers operators increased flexibility and a modular scalable approach to their current and future MMR connectivity and cable management requirements.

Furthermore, fibre trays are designed to manage fibres safely and neatly without

‘It is critical that high-density connections are easily accessible to engineers and that the cable management systems being used remain practical, maintain the appropriate bend radii and protect cables from accidental damage.’

compromising user handling or optical performance. The internal guiding elements of a tray maintain the minimum bend radius of fibres and also provide clear separation between incoming fibres and pre-loaded pigtails. Outgoing patch cords are safely guided away from the tray with

an integrated guiding arm, maintaining a horizontal guidance of the cables and providing a consistent service loop for regular moves, adds and changes.

PLAN OF ACTION

Further downstream within the data centre whitespace, scalable modular cable management systems are essential

for effectively managing connectivity within and between racks. With increasing equipment port densities, and rack real estate at a premium, it is essential that early consideration is given to cabling and cable management systems during the whitespace design phase.

Proper planning in



relation to connectivity requirements allows customers to right size the space needed within their racks for both active equipment and passive structured cabling infrastructure. This helps to maximise revenue, while mitigating against the risk of downtime through poor cable management discipline.



Leading fibre management systems can offer densities of 144 fibres in a single unit. This extreme packing density reduces total cost of ownership and allows valuable rack space to be occupied with revenue generating active equipment. However, it is critical that high-density connections are easily accessible to engineers and that the cable management systems being used remain practical, maintain the appropriate bend radii and protect cables from accidental damage. Using patch panels with integrated cable management, sliding panels and small profile push pull connectors all help to support this.

GET THE BALANCE RIGHT

From the main carrier entry points to the facility, to the individual equipment ports in the racks, every aspect of a professional

FMS needs to balance the usability of the product with important technical requirements. With careful planning, a well designed cable management system will provide the building blocks for long-term growth and seamless upgrade paths to future technologies for many years to come. ■

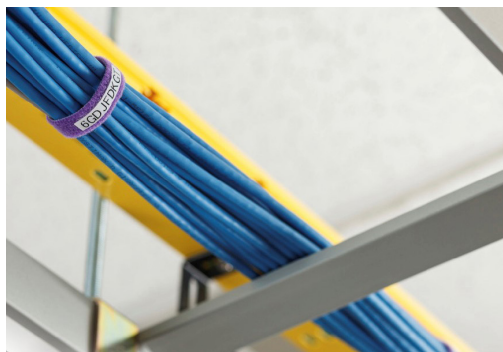


COLIN PARKER

Colin Parker is marketing manager at EDP Europe and has been with the company for 22 years. An experienced and creative marketer, he has helped establish EDP Europe as a leading supplier of infrastructure solutions for the data centre environment, providing a broad portfolio of systems to optimise the performance, efficiency, resiliency, flexibility and security of data centres.

Cable Management Warehouse (CMW)

Ideal for challenging data communications, electrical, construction, medical and other installation environments, **BradyGrip** Print-on Hook Material helps you take the guesswork out of cable identification. Available from CMW, **BradyGrip** is a one of a kind labelling solution, which offers a pinch-less, non-damaging alternative solution to nylon cable ties. Developed by a partnership with **Brady** and **Velcro Companies**, labels can be quickly printed and positioned.



The ultra-adaptable **BradyGrip** solution fits both large and small jobs. It is available in various width material, so it can be used for any number of printable and grippable projects. Its grippy backing

makes it really easy to reposition or remove and using **BradyGrip** eliminates the need for any costly rework. The result is a saving on an engineer's time – maximising efficiency on-site.

CLICK HERE to find out more or to send an email **CLICK HERE**.
cmwltd.co.uk

Excel Networking Solutions

Excel Networking Solutions has a comprehensive **bespoke laser engraved labelling service** that offers labels suitable for patch panels, racks, GOPs, outlets and more, which can be supplied as pre-printed labelling sheets or pre-affixed to products prior to delivery.



solution uses the best quality materials on the market. The acrylic sheets are fadeproof and the laser technology eliminates the risk of diminishing ink visibility.

The 'made to measure' nature means that Excel can print anything to meet the requirements of the end user including specific destination

By eliminating the need to think about labelling during on-site installation, the labelling solution from Excel is proven to save a considerable amount of project time, reducing overall cost. To ensure the highest quality, long-term durability and top performance, Excel's engraved labelling

locations, equipment and company logos – the options are endless.

For further details and prices regarding Excel's bespoke laser engraved labelling service **CLICK HERE**, call 0121 3267557 or **CLICK HERE** to send an email.
excel-networking.com

Panduit

Panduit and its printer technology partner, Epson, have launched the first two jointly developed printers for the industrial, construction and network infrastructure markets.

The MP100 and MP300 portable label printers offer an impressive range of capabilities in compact device formats. These include a fast 1.4-inch (36mm) per second print speed, a wide variety of die-cut and continuous label sizes and materials up to 1.5-inch (38mm) wide, as well as USB connectivity, direct printing from Easy-Mark Plus software and an integrated automatic cutter with full and half cutting. The MP300 also

offers 360dpi print resolution, while the MP100 is fully integrated with Fluke Linkware Live.

Both devices offer a wide operational temperature range of -40°C to 66°C and come complete with printer, one label cassette, AC power adaptor, USB cable and quick reference guide for immediate use.

The devices are compatible with Turn-Tell label cassettes, providing a new solution to clear operator friendly print and read label solutions.

To find out more **CLICK HERE.**

www.panduit.com



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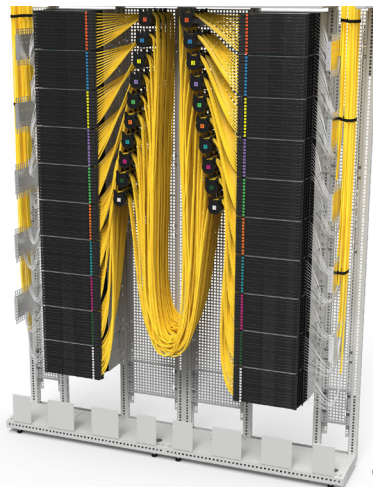


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Corning Optical Communications

The central office or data centre meet-me room has to house, organise and manage an ever increasing amount of optical fibre to cope with bandwidth demand. With Corning's Centrix system, a high-density fibre management system, operators can benefit from industry leading manageable high-density configurability for LC, SC, MPO/MTP or LSH connectivity and innovative patch cord routing.

Centrix can be deployed in multiple applications, supporting up to 4,320



LC connector ports per 2,200mm frame. Coloured and numbered cable routing hubs allow for a fast installation and optimised routing paths for patch cords, reducing the risk of pile-up or entanglement and enabling in-cabinet cross connects with a single patch cord length of 4m.

The front access cabinet – which comes assembled for fast deployment – can be wall mounted as a single or dual cabinet or used in back to back configurations as a quad cabinet, providing a scalable architecture for easy expansion.

For more information [CLICK HERE.](#)
www.corning.com

Chatsworth Products (CPI)

New technologies and a more connected life are challenging organisations to deliver high-performing and reliable networks. An important part of the network is the pathway infrastructure to support and secure cabling from the data centre or equipment room to workstations.

Cable management can enable – or inhibit – everything from the signal integrity of a single cable to the overall performance of a large data centre.

Motive Vertical Cable Management from CPI provides users with an extrusion based patented central track system that includes



four tool-less cable management accessories, to maximise impact and optimise design.

These unique design features offer numerous cable segregation configurations that allow for direct support of fibre optic or copper cables with optimal airflow through the cable manager, which is ideal for preparing networks for higher wattage in power over Ethernet (PoE) and other critical applications.

For more information about CPI's Motive

Vertical Cable Management [CLICK HERE.](#)
www.chatsworth.com

EDP Europe

From its highly efficient, high-density cabling distribution racks (CDR) for deployment in data centre meet-me rooms (MMRs) through to its modular 19-inch

IANOS solution and LC-XD patch cords for final machine connections, EDP Europe holds the full range of Huber+Suhner's LiSA and IANOS optical fibre management systems in stock. EDP

Europe also offers CDR configuration services in support of customers looking for flexibility in relation to how their CDRs are delivered and deployed.

Huber+Suhner's CDR is the most flexible and scalable fibre management system on the market. It can accommodate different fibre and connectivity types, enabling customers to mix applications and scale

on demand. Huber+Suhner CDRs are the optimal solution for high-density cross connect areas within data centres, whether transitioning between incoming carrier

connections and clients' IT suites or providing a high-density transition point between multiple interconnected sites.

IANOS is a high density, modular 19-inch fibre management solution,

offering the flexibility to future proof a fibre connectivity system so that it can react and evolve in tandem with technology changes with minimum cost, time and disruption.

For more information call 01376 510337, **CLICK HERE** to send an email or to visit the EDP Europe website **CLICK HERE.** www.edpeurope.com



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Attention to detail

The importance of high standards when it comes to containment and labelling should never be underestimated, and [Paul Malone](#) of Sudlows explains why

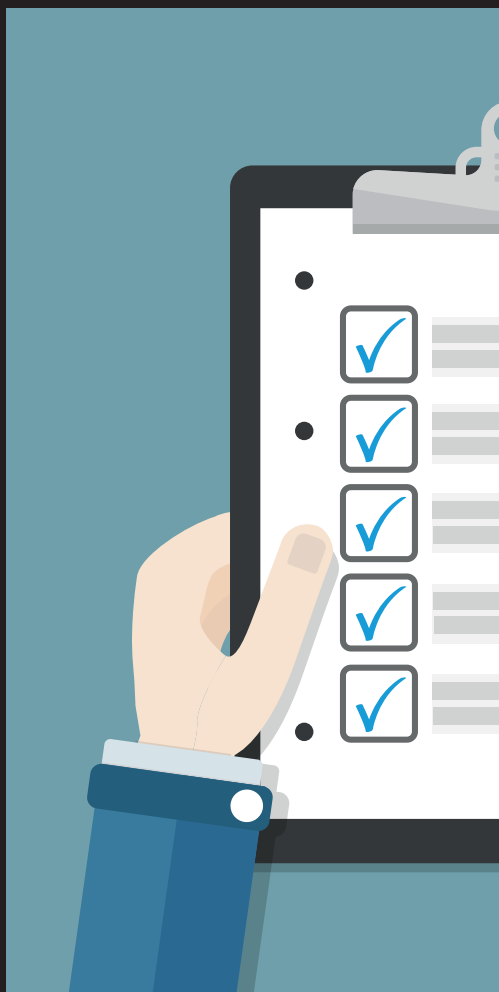
▶ Good cable management is a cornerstone of a successful installation and will help avoid downtime, as well as making moves, adds and changes (MACs) more straightforward. It is therefore important to make sure that all relevant standards are complied with.

DOCUMENTARY EVIDENCE

Possibly the most crucial, and often neglected, element of a structured cabling system is a clear and accurate labelling and administration specification. Implementing the ANSI/TIA-606 standard provides an opportunity to display best practice. Producing test results, 'as fitted' drawings, floorplans and patching schedules that conform to standardised specifications demonstrates high levels of professionalism.

Here are some key dos:

- Do review the standards regularly and ensure that key staff maintain a level of training so that they are aware of industry advances.
- Do create internal specification documentation and update it periodically. Ensure all relevant staff read the



specifications and adhere to the information contained within. As a minimum it should cover installation, labelling, testing and documenting.

- Do create an environment for information sharing and self-policing. Remember, you are only as good as your last job – one rogue installation or missed label can be detrimental in the long-run.
- Do hold regular in-house toolbox talks and staff training days. Encourage business lines to come together and discuss how departments are performing, and review how closely your specifications are being adhered to.

‘Possibly the most crucial, and often neglected, element of a structured cabling system is a clear and accurate labelling and administration specification.’

And here are some don’ts:

- Don’t leave it to somebody else. No matter the size of the organisation, it is good practice to develop roles and responsibilities, and manage expectations. A lack of internal standards will lead to a poor installation and documentation practice. Appoint an engineering manager to govern the process and maintain a level of competence across your business.
- Don’t accept any installation which does not comply with these specifications. It is important to rectify any shortcomings and show your unwillingness to compromise.

THE BIGGER PICTURE

Understanding the classifications and minimum labelling requirements outlined in ANSI/TIA-606 forms the basis of how to structure and plan both the labelling scheme and the documentation process, from a small premises right through to complex multi-campus projects. Use engineering resource and experience to produce clear, concise specifications and



have them readily available for reference by employees.

Remember that labelling, test results and floorplan schematics are all part of one complete structured cabling system. Diligence is required through all project stages from planning to handover to ensure a specification compliant installation. Often this will involve installation teams, project engineers, project managers and, sometimes, the end user. Governance of company specifications and regular training across all departments should be current in order for unity throughout your business.

WHAT ARE THE BENEFITS?

The key benefit will always be productivity, which is directly linked to cost. A 'once properly' philosophy should be adopted so that margins are not impacted by revisiting works that are not to the required standard. Applying logical, eligible, durable labelling schemes that will last the lifetime of the system warranty, and creating easy to understand documentation, makes MACs and fault finding made simpler and faster, while design and installation becomes familiar, and standards second nature.

If your business does not have its own specifications, reach out to a professional and ask for help. A small investment in creating an internal company document now will outweigh the costs for audits, re-testing and validation of cables and connections.

TAKING RESPONSIBILITY

Although a key component of telecommunications installs, containment can often be taken out of the telecommunication installer's scope and provided by third-parties.

In these instances it should be the telecommunication installer's responsibility to request input into the containment design and install. Do not accept any system that falls short of the current telecommunication standards and is not capable of supporting the proposed data solution it is designed for.

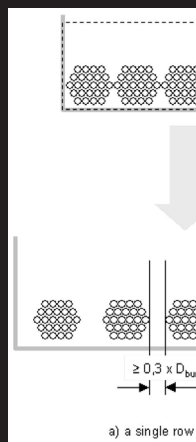
The standards recommend the following, which directly impact how the containment system should be designed:

- Bundles of no more than 24no cables – client or manufacturer specifications may differ from this recommendation and it is advisable to check.
- The minimum bend radius requirements of the specified cable should always be met.
- The cables being installed, as well as existing cables, should not be damaged or have their performance compromised.

SIZE MATTERS

Whether designing your own containment system or verifying a system provided, the sizing of the containment is arguably one of the most important factors. Using the standards, which relate as guidance, we should aim to allow 1.5 times spare capacity on a day one install, as per BS EN 50174-2. It is worth considering that this factor can be achieved by not only sizing the containment correctly but by leaving adequate space for additional containment.

There are tools available from cable manufacturers to aid with this calculation



and to ensure that a design or install meets these standards. As cable construction and outer diameters vary, calculation tools are a very quick and useful way to check capacity and specify the chosen cabling solution. However, if the calculation tool works on the premise that the cables will be loose laid, and not calculating the empty space surrounding the cables and bundles of cables, then the result can be misleading.

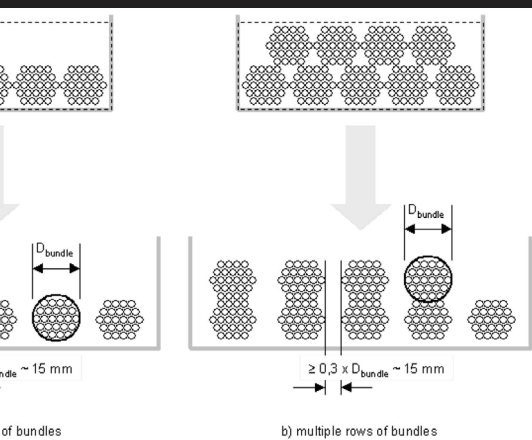
THE HEAT IS ON

An additional consideration to factor into containment design features in the updates within BS EN 50174-2, which was released in 2018. Due to the consideration of heat output in cable bundles as an effect of the increase in power over Ethernet (PoE) usage, the images beneath, showing bundles installed with vertical chimney spacings, are now advised. This installation method will reduce the overall cable capacity within the containment and should be factored into calculations when selecting the correct size and type of

consideration and the blocking of other services that require airflow or maintenance access should always be avoided. Clashes with other trades and services can be avoided with prior input from all parties at design stage.

THINGS TO AVOID

Waterfalls, spillways and manufactured bends are commonly specified products in containment designs. When used correctly, the risk of damage to cables during and post installation is eliminated, resulting in a more aesthetically pleasing install. We also see secondary containment products specified into designs more frequently. When used correctly, they can meet standard requirements such as the recommendation to segregate permanently installed cabling from equipment and patch cords that are not permanent. However, the overuse of these products, where they appear to give no real benefit to the installation, has been seen frequently and should be avoided. ■



containment.

The environment and space in which containment is installed is also a major



PAUL MALONE

Paul Malone is an experienced project engineer and an integral member of the Sudlows estimating team based in Manchester. He has been RCDD accredited for over a decade and has a total of 25 years' experience in the cabling industry.

Colt DCS launches its largest data centre in Japan

Colt Data Centre Services (DCS) has launched its Inzai 3 hyperscale data centre – its largest facility in Japan. The 27MW facility has already achieved over 90 per cent pre-letting and comes at a time of increased demand in the Japanese market.

The launch of Inzai 3 represents an expansion of Colt DCS' Inzai campus, which already houses two other hyperscale facilities. Between

the three data centres there is a total of 50MW of IT power available, with each hall 1,000m² in size.

Inzai 3 also employs the latest construction techniques to counteract the effects of any seismic activity in the region. It sits on a system of seismic isolation mechanisms that will isolate the whole building from any seismic shifts and allow it to move as one, rather than to sway. The result is

a substantial reduction in the impact of any movement – protecting the building, customer hardware and staff on-site.



Schneider Electric and APT deliver data centre digital transformation project for Newcastle City Council

Schneider Electric has delivered a new data centre project for Newcastle City Council in collaboration with Advanced Power Technology (APT).

The initiative included the consolidation of existing data centre capacity, upgrades to the physical infrastructure and the deployment of next generation data centre infrastructure management (DCIM) software to ensure operational continuity and efficient digital service delivery.

The digital transformation project aims to improve the ability of Newcastle City Council to deliver services to 300,000 citizens and businesses within its constituency. Applications hosted within the facility include council tax collection, social and library services, education and

road traffic management.

The new data centre replaces three legacy server rooms, each containing a

number of disparate UPS and cooling systems that were old and in need of maintenance.

Newcastle City Council chose EcoStruxure for Data Centers, Schneider Electric's internet of things (IoT) enabled, open and interoperable system architecture. It consolidates the council's entire mission critical IT infrastructure in a single data hall, incorporating APC Netshelter racks

and data centre containment, Galaxy uninterruptible power supplies (UPS) and power distribution units (PDUs).



Asperitas wins deal for immersion cooling for Crédit Agricole

Asperitas is supporting the data centre scale-up of Crédit Agricole's Chartres site. The Asperitas technology, based on immersion liquid cooling, will enable the bank's data centres to significantly reduce energy costs and environmental footprint, while preparing for a near future with more compute driven applications where high-density solutions are required.

In 2018, a pilot project using Asperitas' AIC24 solution was installed for Credit Agricole, during which the technology

was validated and met all of its Tier 4 data centre and enterprise standards. Asperitas' AIC24 solution will meet the demand for high-density compute on a

system and server level for Crédit Agricole.

The system makes use of natural convection driven fluid circulation – a unique approach that enables immersion cooling to

be both climate independent and fully heat reuse ready. Asperitas is also working alongside Dell Technologies to provide integrated compute solutions.



Secure IT Environments completes data centre migration for Essex Partnership University NHS Foundation Trust

Secure IT Environments recently completed a data centre migration project for the Essex Partnership University NHS Foundation Trust (EPUT). The project involved moving several cabinets and other equipment from Clapham in Bedfordshire to a new location prepared by the EPUT IT team at a site in Colchester.

The project was carefully planned during lockdown restrictions over a series of Microsoft Teams meetings. Over the course of a weekend, equipment was carefully labelled, removed, transported, cleaned and reconnected at the new site ready for the EPUT IT projects team to test and take live on the Monday

morning.

Secure IT Environments also worked closely with the EPUT IT projects team to ensure that connectivity was maintained for a number of key services through the existing Bedfordshire data centre while the migration took place. This included the configuration of network services to provide local optical fibre connectivity, connectivity to the Trust Media Business EtherVPN network and WAN services. A remote access virtual private network service was included in the migration, as well as a point to point connection between the new data centre in Colchester and the EPUT's primary data centre in Grays, Thurrock.

North appointed official network technology integrator for Birmingham 2022 Commonwealth Games

North has been appointed as official network technology integrator for the Birmingham 2022 Commonwealth Games, enabling the delivery of critical network and telecommunications services across all competition and non-competition venues. It will provide the end to end design, delivery, integration and operation of the communication network services.

The Birmingham 2022 Commonwealth Games will see athletes from 72 nations and

territories compete in 19 sports across 15 competition venues from 28th July until 8th August 2022. North's integration specialists will lead and deliver the network connectivity to enable real time sporting updates to be shared with the world's media.

As overall prime integrator, North will lead the deployment of the LAN, WLAN, telephony and essential cabling services, while providing critical venue infrastructure support and incident management across all venues.



AIMS Data Centre achieves TIA-942 Rated 3 design certification

Menara AIMS, headquarters of AIMS Data Centre, has achieved the TIA-942 Rated 3 data centre facilities certification from EPI. EPI is the only certification body in the world to have received the Conformity Assessment Body (CAB) accreditation from the Telecommunications Industry Association (TIA) and has performed TIA-942 audits for mission critical data centres all over the world.

The certification validates that AIMS' infrastructure is concurrently maintainable. It can undergo any planned maintenance without downtime, which means that AIMS is able



to fully support mission critical customers' 24x7 operations.

TIA-942 certification is a global quality benchmark for data centre facilities. Mission critical infrastructure requires 24x7 availability, ensured by nine critical aspects in the data centre design and build. TIA-942 covers all these nine areas – electrical, mechanical, telecommunication infrastructure, fire

detection/suppression, safety, physical security, site location, architecture and monitoring.

PROJECTS & CONTRACTS IN BRIEF

Emtel Data Centre has become the first company in Mauritius to be awarded the TIA-942 Rated 3 data centre facilities certification.

Extech Cloud has provided Richard Place Dobson Chartered Accountants and Business Advisors (RPD) with a completely modernised IT infrastructure.

MLL Telecom has connected 253 Cambridgeshire schools to full fibre broadband on behalf of Cambridgeshire County Council.

Equinix is expanding Platform Equinix with a third International Business Exchange (IBX) data centre in Perth. PE3 will be the company's 18th data centre in Australia.

Nokia has deployed an industrial grade private wireless 5G campus network at the Nuremburg development centre of MYNXG.

Etex has selected GTT's managed SD-WAN service to connect 80 of its sites across Europe, the Americas, Africa, Asia and the Middle East.

Kao Data has announced a new partnership with Vorboss to expand its low latency, resilient connectivity capabilities at its Harlow campus.



Sunbird Software

Improve uptime by being alerted of conditions that can damage IT equipment in your data centres and edge sites.

With the latest release of Power IQ 7.2, Sunbird Software enhances its remote data centre management capabilities by adding support for vibration, motion and proximity sensors. Users can leverage Power IQ's enterprise class data collection engine to collect, retain and chart historical trends of vibrations.

This data can be correlated with disk drive failures to ensure service level agreements are met by colocation

providers and maximise uptime. Combined with Sunbird's dcTrack Parts Management feature, makes and models of disk drives that have higher probability to fail can be easily identified in every piece of

equipment across an organisation's global infrastructure estate.

Additional new features also include a Legrand power distribution unit (PDU) linking feature that reduces the number of

IP addresses and data ports needed to provide dramatic savings in deploying data centre and edge IoT.

[CLICK HERE](#) to schedule a demo.
www.sunbirddcim.com



Fluke Networks

Fluke Networks' MicroScanner PoE is the first field tester to be certified for IEEE 802.3 power over Ethernet (PoE) interoperability by successfully completing the Ethernet Alliance Gen2 PoE Certified program test plan. The MicroScanner PoE speeds the installation and troubleshooting of PoE devices including those supporting the new high-power IEEE-802.3bt standard.

Ethernet Alliance PoE Certification validates that PoE devices strictly adhere to IEEE standards. Customers who purchase Ethernet Alliance PoE Certified products can expect effortless integration and operation as a result. As a member of the Ethernet

Alliance's Gen 2 PoE contributing group, Fluke Networks has worked with leading designers and suppliers of PoE equipment.

The MicroScanner PoE can test and troubleshoot a wide variety of both standards compliant and non-compliant sources. It also provides a complete set of tools for technicians installing PoE and non-PoE devices. Cable wiremapping, a built-in toner and distance to fault indicators can track down cabling problems quickly. When connected

to a live switch port, the unit displays the speed of the port up to 10Gb/s, which is especially useful for troubleshooting slow access points.

For more information [CLICK HERE](#).
www.flukenetworks.com



Kohler Uninterruptible Power (KUP)

Kohler Uninterruptible Power (KUP) has launched its PowerWAVE MF1500 DPA. Exceptionally resilient, flexible and scalable to 6MW, this modular UPS offers best in market voltage and frequency independent (VFI) mode energy efficiency. It redefines lifetime cost for data centres and other high-density applications, without compromising reliability.

The MF1500 DPA combines Decentralised Parallel Architecture (DPA) technology with the latest advances in components and software. DPA products contain all the essential components of a UPS within each module, including the static switch, allowing independent



operation. Its innovative slide-in, cable free module design can be hot-swapped without affecting the rest of the system, easing maintenance and reducing system repair times to minutes.

Protection is achieved with 97.4 per cent VFI energy efficiency, reducing environmental impact, optimising Power Usage Effectiveness (PUE) measures and delivering significant

financial savings in energy and cooling costs. In addition, the advanced design of the MF1500 DPA maximises the life of consumables such as fans and capacitors, with replacement required only once in a 15-year period.

To find out more [CLICK HERE.](https://www.kohler-ups.co.uk)
www.kohler-ups.co.uk

Rittal

Digital transformation is creating innovation at a pace that has never been seen before. Rittal has responded with RiMatrix Next Generation (NG) – a pioneering, open platform for creating data centres of all sizes and scale, flexibly, reliably and quickly, and one which supports comprehensive consulting and services throughout the entire IT lifecycle. The modularity and backwards compatibility of RiMatrix NG mean that it's possible to update individual components in an infrastructure, so the entire data centre



can continually be adapted to meet fast changing technological developments.

RiMatrix NG modules cover five functional areas – racks, climate control, power supply and back-up, IT monitoring and security. This enables

IT managers to quickly and easily create solutions that are tailored to their individual requirements. RiMatrix NG is also the first platform to support the use of Open Compute Project (OCP) components and direct current in standard environments.

To find out more [CLICK HERE.](https://www.rittal.co.uk)
www.rittal.co.uk

All you need to know

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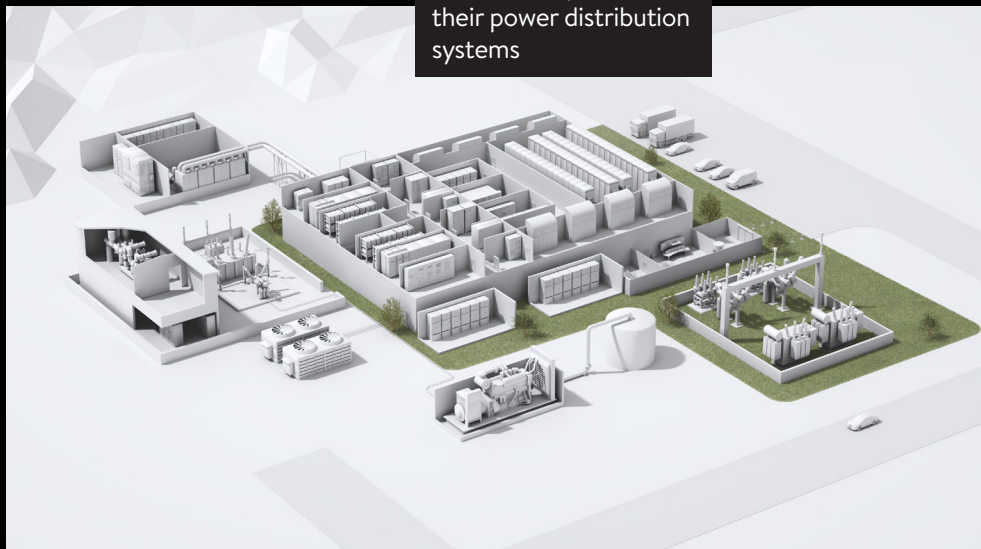
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Supply and demand

James Madden of ABB shares his views on how data centre operators can achieve resilience and flexibility from their power distribution systems



▶ Data demand is set to grow but it's hard to forecast how much, with data centre operators already reacting to rapid growth in remote working. Looking ahead, there will be more demand as new 5G telecoms networks will provide download speeds up to 10 times faster than 4G, as well as supporting the internet of things (IoT).

FUTURE GROWTH

The size of future demand is not clear, meaning that is hard to plan how much power will be needed to feed servers. One recent study by RWTH Aachen University estimated that within five years Germany's 5G rollout may create new annual power demand of 3.5TWh from the country's

data centres. This is equivalent to the power demands of 2.5 million people.

Data centre operators want flexible power distribution systems that they can optimise. In addition, they need to demonstrate high levels of energy efficiency. That's because governments are waking up to growing demand from power hungry data centres and are encouraging greater energy efficiency.

HELPING HAND

Operators want to build flexibility into their infrastructures to cope with future unknowns. The supply chain can help by coming up with non-traditional designs to make power distribution more efficient and flexible.

For example, many operators of large



scale facilities are considering stepping up to medium voltage distribution. This will increase energy efficiency by reducing energy losses at higher voltages. In addition, medium voltage uninterruptible power supplies (UPS) and battery energy storage systems allow operators to participate in demand side response. They can also use these systems to be more self-reliant and become less dependent on their grid connection.

FLEXIBLE FRIEND

Modular equipment is very popular with

operators that have a 'build as you grow' strategy. It provides flexibility to adapt a power distribution system as a business evolves. Modular systems can be supplied as skid mounted prefabricated power modules, which integrate base products such as UPS systems, transformers and switchgear. Operators can deploy modular systems as and when they need to grow. In addition, they can redeploy modules as their needs change.

The modular approach can also help minimise lead times for new capacity. Build times are becoming progressively shorter



and this puts the supply chain under pressure. Therefore, by using standardised modular powertrains, operators can roll out new capacity quickly without having to design and engineer a power distribution system that is closely specified for their site.

In the UK the Brexit process is another source of uncertainty, as trade negotiations continue.

Depending on the outcome of the talks, some data centre

operators may need to rollout new capacity with a short lead time to ensure the UK does not need to rely on cross-border data flows.

Any new server capacity will need adequate power and cooling

infrastructure, so operators are watching the negotiations closely so that they can react quickly and deliver to condensed

build programmes.

ENSURING RESILIENCE

With the economy being increasingly reliant on data, resilience is a top priority. Loss of data can cost business tens of thousands of pounds per minute. However, some data centre operators are putting less faith into the power grid than they once did. This is highlighted by events following a power outage on the UK's transmission and distribution grids on 9th August 2019, which led to loss of power for sites including railway lines and hospitals.

This has prompted some data centre operators to take power into their own hands by deploying their own gas powered generators as their primary power source. Not only does gas provide independence and resilience, but it has a lower environmental impact than other fossil fuels and provides operators with the opportunity to sell power to the grid through demand side response schemes.

The latest electrical distribution technology is essential for this. Operators need protection and control systems to

manage grid connections and oversee operations like islanding and load shedding. These rely on the IEC 61850 smart grid communication standard. In addition, smart

‘Data centre operators want flexible power distribution systems that they can optimise. In addition, they need to demonstrate high levels of energy efficiency.’

controllers can help operators protect assets like generators and transformers, and to manage the automatic transfer and reconnection of loads and generators. At the medium voltage level, the power conditioning equipment in a UPS will isolate a data centre from grid disturbances.

SOLUTION PROVIDER

There's no one size fits all solution for the sector. Digital technology has potential to help operators optimise their maintenance and operations but not all operators want extensive digital monitoring and automation. Therefore, it's helpful that digitalisation is scalable so that they can choose the level of remote monitoring



that suits them, for example, by deploying it just for new infrastructure or into legacy systems.

Potential benefits include the ability to make more informed decisions and better visibility for operators. This is possible by using data centre infrastructure management (DCIM) systems to monitor the power consumption and performance of individual systems. Digitalisation can also help operators of multi-tenancy data centres react quickly to growing demand to provide software as a service (SaaS) and infrastructure as a service (IaaS) applications. They have been early adopters of digitalisation, as it helps them to create more competitive architectures.

COMPETITIVE STREAK

The key to competitiveness is to focus on reliability and total cost of ownership, rather than initial cost. In multi-megawatt cloud and colocation data centres, operators need infrastructure that is energy efficient, reliable and flexible. They also want to make the most of available space and reduce energy consumption. This is where modular construction and high energy efficiency helps. ■



JAMES MADDEN

James Madden is ABB's data centre sales leader for north Europe. He has a family background in panel building and started on the tools as an electrician before earning a degree in engineering technology at Dublin Institute of Technology. Since then he has developed his career in the supply chain supporting the data centre industry, combining his technical knowledge with business skills.

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