Inside_Networks

THE NETWORK INFRASTRUCTURE E-M

Better by degrees

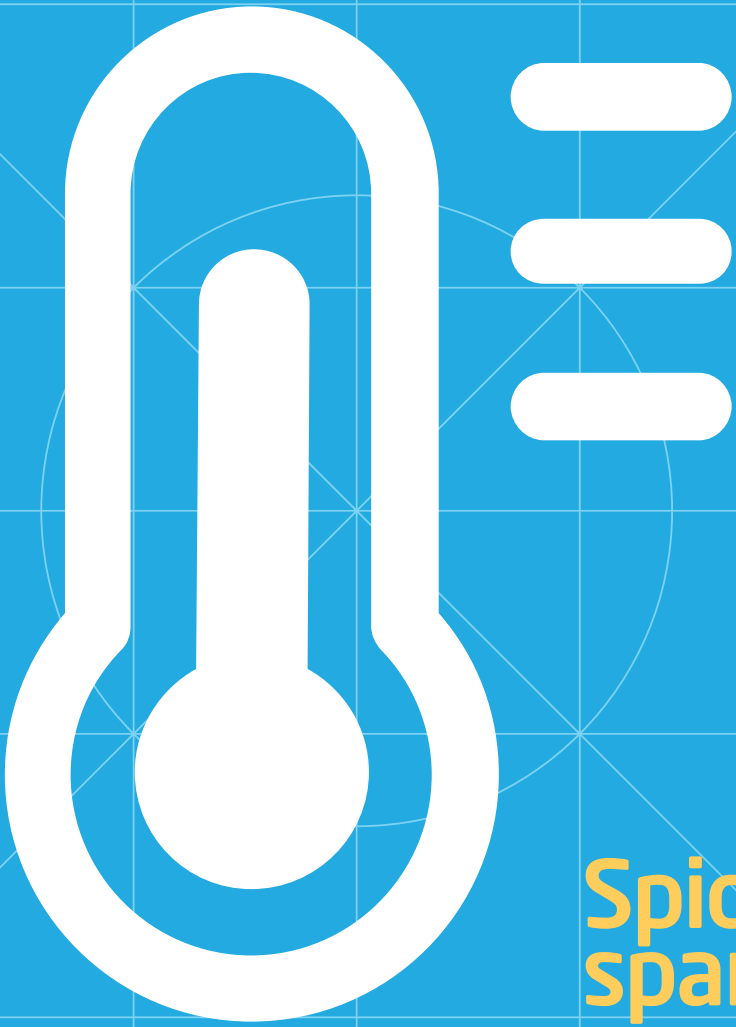
WHY EFFECTIVE CLIMATE CONTROL MATTERS

Breaking the cycle

ARE EDGE DATA CENTRES HERE TO STAY?

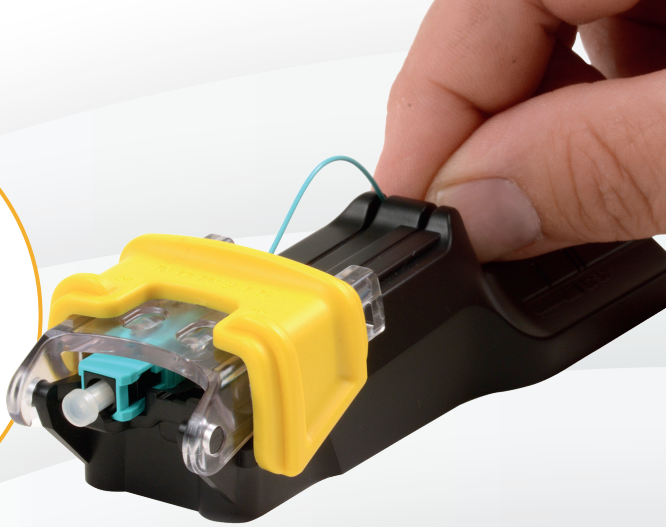
AGAZINE WWW.INSIDENETWORKS.CO.UK

SEP
19



Spick and span

CLEANING AND INSPECTING MPO CONNECTORS



Reduce termination time. Ensure reliability.

Buy 300 LightBow connectors and receive a FREE termination kit.

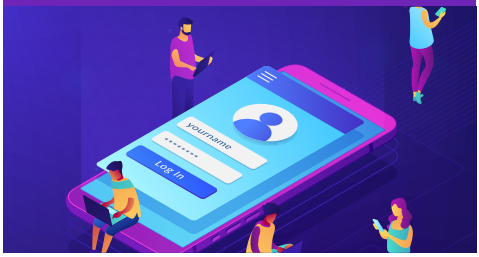
For a limited time only.

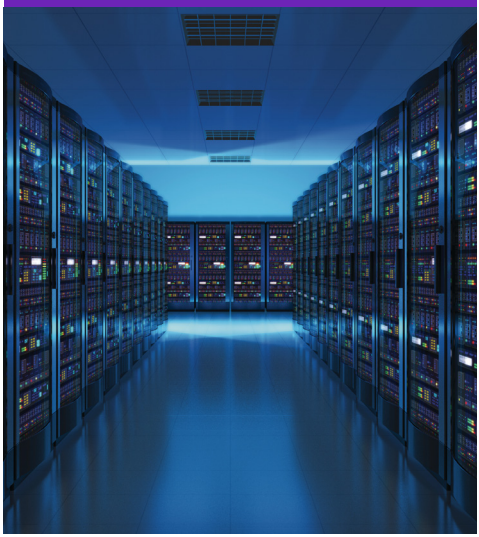
LightBow

Siemon's LightBow mechanical splice termination kit includes a patent-pending, easy-to-use termination tool that dramatically reduces termination time while ensuring reliability. With universal LC/SC compatibility, the LightBow tool simplifies fiber insertion and avoids end face damage when terminating LightBow pre-polished mechanical splice connectors.

Discover more: siemon.com

SIEMON™





NCI® Apprenticeship in a Box

Network Cable Installer (NCI®) Apprenticeship in a Box

NCI® Apprenticeship in a Box:

Duration: 12-15 months
Funding Value: £9,000
Delivery Method: Flexible block release
Content: Timetable is available

CNet Training Launch the First Government Funded Apprenticeship for Network Cable Installation in England and Wales.

The Network Cable Installer (NCI®) Apprenticeship in a Box is at qualification level 3 and is designed for those wishing to aquire the highest levels of knowledge, skills and expertise in network cabling infrastructures whilst gaining valuable on-the-job experience.

The NCI® Apprenticeship is levy funded to £9,000 or 95% co-funded. It has been developed by CNet Training with major installation companies, it's perfect for new or existing employees wishing to acquire the knowledge to enable them to complete both copper and fibre cable installation projects.

The content of the NCI® Apprenticeship has been carefully planned and prepared and provides the apprentice and employer with a full itinerary of activities to follow and implement. It introduces the concept of an 'Apprenticeship in a Box', designed to take care of the time-consuming planning often associated with Apprenticeships and on-going professional development.

In addition to the technical skills gained surrounding installing, testing and certifying copper and fibre cable installs, the Apprentice will also learn to work to the correct standards and best practices around smart building technology such as wireless access devices, VoIP telephony, CCTV cameras, door access controls and biometric security systems. They will also be eligible for an ECS card and undertake full health and safety training.

NCI® Apprenticeship in a Box

Qualifications:
2 x BTEC Level 3 Awards (Copper & Optical Fibre)
BTEC Level 4 Professional Award (CIIT®)

Certifications:
Official Certified Network Cable Installer (CNCI®) Certification
Official CertifiedIntegrated Infrastructure Technician (CIIT®) Certification

Plus:
Eligibility for an ECS (Electrotechnical Certification Scheme) Datacomms Specialist CNCI® Card

Confined Spaces
Working at Heights
PASMA
Asbestos (online)
First aid at work
IOSH
NRSWA

CNet Training — Customer Focused ▶▶ Quality Driven ▶▶▶▶

Contact the CNet Training team to request a follow up:
info@cnet-training.com | +44 (0)1284 767100 | cnet-training.com

Going full circle

EDITOR
Rob Shepherd
07708 972170

SUB-EDITOR
Chris Marsland

ADVERTISING MANAGER
Kate Paxton
01603 610265

CREATIVE DIRECTOR
Vishnu Joory

TECHNOLOGY CONSULTANT
James Abrahams

CIRCULATION MANAGER
Debbie King

ACCOUNTS
Billy Gallop

CHALK HILL MEDIA

'It's crazy how cyclical this industry is! Centralised, decentralised, centralised and now some more decentralised resources due to edge computing,' is a quote from Carrie Goetz in her response to this month's Question Time and, as usual, she's right on the money.

In some respects the fact that the data centre sector been through so many iterations in its relatively short existence highlights its dynamism and, indeed, its ability to adapt to the changing requirements of organisations and the public at large. It also, however, begs the question whether this is just the latest stage in a longer process that may, in due course, revert to a centralised model once again. As well as ascertaining whether the decentralised model is here to stay, we've also asked a panel of experts to examine how disruptive the current trend is for owners and operators of larger colocation facilities, and you can **CLICK HERE** to read their comments.

While passive optical networking (PON) has been subject of much conjecture during 2019 so far, fibre optic technology continues to make its mark elsewhere. **CLICK HERE** to read why Dieter Studer of R&M believes developments in this area are helping to meet the needs of today's data centres. Meanwhile, those responsible for configuring optical fibre infrastructures will also understand the need to avoid contamination on the endface, so **CLICK HERE** to read Mark Mullins of Fluke Networks' best practice advice for cleaning and inspecting multi-fibre push on (MPO) connectors.

Also in this issue we have a special feature dedicated to cooling and climate management. Karl Lycett of Rittal explains why effective climate control is necessary for optimal equipment operation and uptime, while Colin Parker of EDP Europe explains how to go about it in a cost effective and efficient way. **CLICK HERE** for Karl's article and to read Colin's **CLICK HERE.**

With lots more besides the above, I hope you enjoy this issue of Inside_Networks and 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.

Rob Shepherd
Editor

PoE—Is it Going to Work?

With multiple standards, power levels, and non-standard implementations, PoE can be frustrating. But with knowledge and the right tools, you can ensure an easy, reliable installation.

MicroScanner™ PoE

Learn more in our white paper

FLUKE networks®

EcoStruxure™
Innovation At Every Level

IT professionals deploy at the edge with the

SIMPLICITY

of rack solutions from APC™ by Schneider Electric.

Meet the changing demands of edge environments with rack systems customized to your customer requirements.

- Standardized or tailored rack solutions available from 12u to 52u
- Validated using our proven design tools
- Scalable to accommodate any size environment

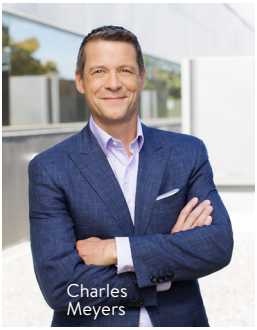
#CertaintyInAConnectedWorld

apc.com/edge

Life Is On

APC™ by Schneider Electric

Equinix and GIC form joint venture to develop and operate hyperscale data centres in Europe


Charles Meyers

Equinix has formed a limited liability partnership with GIC to develop and operate xScale data centres in Europe. The initial facilities in the joint venture will serve the unique core workload deployment needs of a targeted group of hyperscale companies, including the world's largest cloud service providers. The facilities, on or proximate to some of Equinix's existing IBX campuses, will allow these key enablers of digital transformation to streamline their continued growth, while strengthening Equinix's leadership position in the cloud ecosystem.

Under the terms of the agreement, GIC will own an 80 per cent equity interest in the joint venture and Equinix will own the remaining 20 per cent, with the joint venture expected to close in Q3 2019. Equinix will sell both its London LD10 – retaining part of that business under a lease back – and Paris PA8 IBX data centres and the associated leases, as well as certain other development interests, to the joint venture. New xScale data centres are expected to be developed in Amsterdam, Frankfurt and London.

Charles Meyers, president and CEO at Equinix, said, 'Partnering with a world class investment partner like GIC will provide the opportunity to make significant capital investments in order to capture targeted large footprint deployments while continuing to optimise our capital structure.'

Gartner claims global IT spending will grow 0.6 per cent in 2019

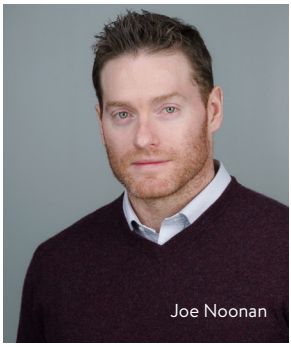
Worldwide IT spending is projected to total $3.74tn in 2019, an increase of 0.6 per cent from 2018, according to the latest forecast by Gartner. This is slightly down from the previous quarter's forecast of 1.1 per cent growth.


John-David Lovelock

'Despite uncertainty fuelled by recession rumours, Brexit, trade wars and tariffs, we expect IT spending to remain flat in 2019,' said John-David Lovelock, research vice president at Gartner. 'While there is great variation in growth rates at the country level, virtually all countries tracked by Gartner will see growth in 2019. Despite the ongoing tariff war, North America IT spending is forecast to grow 3.7 per cent in 2019 and IT spending in China is expected to grow 2.8 per cent.'

He added, 'Although an economic downturn is not the likely scenario for either 2019 or 2020, the risk is currently high enough to warrant preparation and planning. Technology general managers and product managers should plan out product mix and operational models that will optimally position product portfolios in a downturn, should one occur.'

Almost one-third of organisations have lost data due to a data centre outage in the last year


Joe Noonan

30 per cent of organisations have lost data as a result of a data centre outage in the past year, while 42 per cent said they had experienced a period of downtime. That's according to a new survey conducted by Unitrends, which polled more than 400 respondents from organisations of all sizes and industries about the challenges and trends that IT departments and admins face when protecting data from downtime and disasters.

According to the survey 58 per cent of respondents said they had to recover at least some of their data from the cloud at least once last year, while 11 per cent in total had to recover data from the cloud five times or more. Surprisingly, however, more than half of respondents (55 per cent) said they tested their data recovery capabilities once a year or less.

Joe Noonan, vice president of product management at Unitrends, said, 'It is concerning that most enterprises don't really know for sure if they can recover their applications after a downtime event, as they test rarely or not at all. The need to continuously test recovery tools is critical to ensuring speedy business restoration.'

Businesses predict huge potential for 5G adoption but are not ready to implement it


Jason Wells

A new study from Cradlepoint has revealed that businesses expect 5G to be a major part of their technology roadmap but have a long way to go before they are ready to implement a solution.

The study reveals that 78 per cent of organisations think 5G and gigabit class LTE may impact, or already has made an impact, on their technology roadmap in the next 1-2 years. However, only a fifth (21 per cent) say they are fully prepared for adoption and nearly half (46 per cent) revealed they have made only minor or no preparations at all to implement 5G.

'Businesses need to define their pathway to 5G as a matter of urgency, but many are unsure where to begin,' explained Jason Wells, vice president and general manager EMEA at Cradlepoint. 'Gigabit class LTE, for example, is a mature, higher performance expansion of the 4G LTE network offering theoretical download speeds of at least 1Gb/s. It's a wireless option that businesses should be considering now – it can be enhanced gradually as business move down the pathway to full 5G connectivity.'

Hydro66 announces OCP colocation facility compliance

Hydro66 has been formally certified by the Open Compute Project (OCP) as an OCP Ready Colo Solution Provider. OCP is a collaborative community focused on redesigning hardware technology to efficiently support the growing demands on compute infrastructure, most recently including a standard for innovative colocation data centres like Hydro66.


Steve Helvie

Steve Helvie, vice president of channel development at OCP, said, 'There is a growing need for data centre operators who really understand how to deploy and support OCP infrastructure. So, having facilities that are OCP Ready becomes a critical piece of the overall value chain. We're excited to have Hydro66 as an authorised OCP Ready Colo Solution Provider with its facility in Boden, Sweden, obtaining certification. It is the first facility in the Nordics to achieve this status and another example of how Europe is leading the way in OCP Ready facilities.'

The Datacenter Group acquires facilities from NovoServe

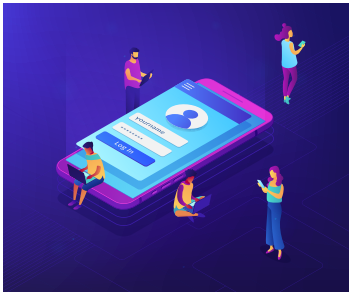
The Datacenter Group (TDCG) has acquired the data centre infrastructure of NovoServe in Doetinchem and Enschede, in the eastern part of the Netherlands. By selling its two data centres, NovoServe is able to apply focus to its international infrastructure as a service (IaaS) hosting activities, whilst TDCG expands its regional coverage. This acquisition therefore benefits the growth strategies of both companies. Through focus on core activities both businesses are able to realise their ambitions for growth.

The acquisition was preceded by almost a year of research in which both companies investigated the different collaboration options. Edwin Kennedy, chief commercial officer at TDCG, said, 'Providing IaaS hosting is really a different type of specialization as opposed to managing a data centre infrastructure and hosting data and applications in a private cloud, which is a growing market for us. The latter really requires much more consultancy and customer guidance.'

Herke Plantenga, CEO and co-founder of NovoServe, is pleased to be taking a step back from operating the data centres and commented, 'Although we have a lot of experience in the field, it's not our core business. With TDCG on board as specialist in the area of data centre services, we can focus on our core activity – providing IaaS hosting services to a global customer base. In addition, this collaboration guarantees the scalability of our data centre infrastructure.'

UK companies are failing at the basics of IT security

A survey of 1,253 UK workers in full or part time employment, carried out by Probrand.co.uk, has revealed that investing in new and expensive technology, whilst not considering the most basic of security steps, is potentially widening companies' vulnerabilities to cyberattacks, which cost UK businesses millions annually.



43 per cent of the surveyed workers, who all use IT systems in their workplace, said their company has invested in new cybersecurity products and services during the past year – but the data shows employees themselves are risking this being undermined through sloppy security practices.

67 per cent said they have a basic password, such as a single word or simple consecutive numbers, at work – meaning they could easily be guessed or hacked. A further 63 per cent admit that they do not change their password regularly and 46 per cent say they have never changed their password since they began working at their company. The data also revealed that 37 per cent of workers report to having used unsecure network connections when working remotely.

Matt Royle, marketing director at Probrand, commented, 'Our findings have shown that a shocking number of UK businesses are struggling at the very basics, so we would encourage business leaders to monitor and regulate even the simple cybersecurity practices. Writing protocols into company handbooks and employee contracts are just some of the ways of doing this.'

NEWS IN BRIEF

Worldwide shipments of devices — PCs, tablets and mobile phones — will total 2.2 billion units in 2019, a decline of 3.3 per cent year over year, according to Gartner. The mobile phone market is set to record the worst performance of these device types, declining by 3.8 per cent.

The Telecommunications Industry Association (TIA) TR-42.12 engineering committee on optical fibres and cables has issued a call for interest for document ANSI/TIA-492CAAC titled Sectional Specification for Class B Single-Mode Optical Fibers. This document will adapt IEC 60793-2-50:2018 as ANSI/TIA-492CAAC.

Rackspace LON5 has achieved OCP Ready status.

Bizagi has been named as a supplier on Crown Commercial Service's G-Cloud 11 framework.

QA has acquired Cloud Academy. Cloud Academy will add QA's catalogue of more than 500 certification courses and 1,500 instructor-led courses to blend classroom learning with its digital platform.

Welcome to Nexans

See how we make our cables…and where they are used

Data Centres

Office & Enterprise

Industrial Environments

Healthcare

Nexans Cabling Solutions UK
2 Faraday Office Park
Faraday Road, Basingstoke RG24 8Q
Tel: 01256 486640 / ncs.uk@nexans.com
www.nexans.co.uk/LANsystems

Nexans
BRINGS ENERGY TO LIFE

Evolving to secure BY

Hi Rob

Current networking technology is not designed to comprehend or protect the internet of things (IoT). In the past decade we have seen an evolution from small numbers of similar devices requiring network access, to the present day where we see everything connected.

Users now have more access requirements with a greater variety of devices and applications, all of which need to be identified, monitored and contained in order to keep the network secure. This is a daunting task for organisations equipped with outdated tools. Gartner found that in the past three years, 20 per cent of organisations have been subject to an IoT based attack. Fortunately, network access control solutions (NACs) are evolving to keep in step with the large scale changes affecting networks.

Traditional NAC solutions secured access networks by combining policy management and enforcement with security posture compliance for endpoints. Tools were deployed to protect employee, contractor and guest devices like laptops, smartphones or tablets. This meant conducting checks on endpoints to ensure that each device was running the required software, patches, virus signatures, and more.

The transition to Wi-Fi as the dominant mode of network access has funnelled large numbers of devices on to the network. As a result, and coupled with varied feature capabilities, operating systems and security functions, most are inherently difficult to secure. With no unison to the variety of makes, models and operating systems, NAC solutions needed to support all device types and user profiles, guest or employee, alike. Consequently, modern day NAC security has evolved to also encompass guest access management, bring your own device (BYOD) and IoT device security, as well as security posture analysis and control.

With so many levels of network access,

YOD and IoT

managing and enforcing appropriate network access could be difficult. NACs can be controlled with predefined role based policies, allowing network administrators to set specific levels of access.

NAC solutions have evolved to include automated device profiling, by analysing devices' unique electronic fingerprints to enable the identification of make, model and operating system. The NAC can also onboard different device categories into dedicated VLANs with appropriately defined network policies. This automated approach is particularly useful for securing user-less IoT at scale. With the growing acceptance of cloud computing, next generation NAC solutions will also become cloud based, providing greater flexibility and efficiency in deploying and managing NACs.

It is clear to see that our use of networks has evolved, and it is vital to use a modern NAC solution to keep pace with the growing challenge of maintaining network visibility, security and stability. Organisations need a reliable method to identify every 'thing' on their network, and dictate from a centralised point what devices should and should not be capable of accessing while connected to the networks. These modern automated, and centralised features are the new standard for securing the enterprise, and significantly increase IoT security at any scale without requiring IT intervention.

Tony De La Rosa
Aerohive

Editor's comment

The sheer number of IoT devices and the proliferation of BYOD makes network security more vital than ever, yet without the ability to control access this can be almost impossible. Tony's advice about using a NAC is well worth heeding and this technology should be on the radars of all network managers.

See the light

Hi Rob

Following the great discussions in June 19's Inside_Networks Question Time concerning passive optical networking (PON), I'd like to make the case that now is the time for passive optical LAN (POL).

With bandwidth demands continuing to skyrocket, a POL can address many of the issues with which today's traditional network topology is struggling. When POL was first introduced eight years ago as a replacement for a traditional active Ethernet architecture, it promised a long-term solution to meet future bandwidth requirements, without having to replace the existing horizontal infrastructure repeatedly.

By leveraging many of the lessons learned in deploying fibre to the home (FTTH), POL provided a compelling cost model and a future ready solution. But POL also came with a unique set of challenges that had to be solved to deploy in an enterprise network, such as powering. In FTTH applications, this was solved by using the homeowners' electrical power as the powering source. However, in a PON network this becomes problematic, because tapping power for the edge devices is not really practical or cost effective. But just as a solution was developed for FTTH, POL in the enterprise now has remote powering solutions that make that a non-issue.

Video streaming is probably the biggest driver of bandwidth increases but another factor driving network traffic is the transition to cloud based services. This has caused pressure on the network, especially in campus and WAN connections out to carrier networks. These demands are fairly predictable and manageable, but we are seeing applications such as 5G, audiovisual networks, IoT and Wi-Fi begin to evolve in the network.

Ultimately, the speeds required in the future network will outpace what a traditional network can handle and, as IoT devices are added to the network, there's a risk of layers of different networks clogging pathway space throughout buildings.

Given that POL replaces the aggregation electronics and associated copper cables of traditional networks with passive optical splitters and singlemode fibres, it creates an architecture that is lower in cost to purchase, install, and maintain – and with a far longer lifespan – than traditional copper architectures.

Piers Benjamin
Corning Optical Communications

Editor's comment

The diverse feedback I received regarding this subject was very interesting and PON and POL are certainly attracting their fans. Piers makes a convincing case for them both and it will be fascinating to see how they challenge the traditional network topology.

LEVITON

Pro Tip #3

Cat 6A cables require extra depth behind faceplates for **proper bend radius**.

More Cat 6A Tips ▶

Go #PlasticFree #Cho

At Excel Networking Solutions, we are committed to reducing our impact on the environment. We have taken steps to remove the majority of the single use plastic from our copper and fibre component product packaging. Ultimately, this will remove **16 million single-use plastic bags** from the supply chain each year, which equates to an annual reduction of **40 tonnes of plastic waste.***

*Based on our sales figures

Aside from the environmental and corporate responsibility benefits that come from choosing a product with plastic free packaging, there are a host of other positive factors to consider:

- **Reduced Waste Volume**
- **100% Recyclable Waste**
- **Quicker to Install**
- **Easier for Engineer On-Site**
- **Lower Installation Costs**

Did you know...

You could **save up to 60% on your preparation time** by choosing a product with plastic free packaging! The Excel Networking multi-packs of keystone jacks (100-181-24), for example, are supplied in a simple tray within a cardboard box. This in-tray can be freely removed, and the keystone jacks can be popped out when needed. The products are supplied free from plastic bags and with only one set of printed assembly instructions for an added environmental benefit.

Take a look at our video to see the time-saving for yourself:

ooseExcel

ZERO Plastic Packaging

excel without compromise.

Why should you #PassOnPlastic?

It takes up to **1,000** years for plastic to degrade.

If nothing is done by **2050** pieces of plastic in the ocean will outweigh the number of fish.

Did you know that **32%** of global plastic waste ends up in the ocean?

Over **500** species of marine animals have either eaten or been entangled in plastic.

"As a business we are acutely aware of the damage that plastic has on the environment and we are determined to lead the way in our industry to remove as much 'single use plastic' from the supply chain. It hasn't been an easy change but one that we've persevered with to develop alternative 'plastic free' packaging for much of our copper and fibre product lines, as well as reducing card board box sizes where we can. This latest drive to remove single-use plastic bags from a range of Excel products is the latest example of our efforts to improve our sustainability – but it is by no means the end of the road.

However, we cannot deliver this change alone – it must be a cross-industry effort. We hope that our competitors will follow in our footsteps and work to remove single-use plastic packaging from their products."

Jason Rudge – Commercial Procurement Director

Keep up to date with our plastic free packaging initiative on our website: **www.excel-networking.com/plastic-free** or contact our sales team for more information on **0121 326 7557** or **sales@excel-networking.com**

Helping your business journey to

ECA
Excellence in Electrotechnical & Engineering Services

Growth & Prosperity

ECA offers valuable Trade Association membership to organisations in the electrotechnical & engineering services industry, which includes:

- Extensive expert technical support
- Free access to ECA's eRAMS (online Risk Assessment & Method Statement service)
- Significant discounted access to BSI standards
- Expert business support including commercial, employment and health & safety
- Helping to get you specified
- Free CHAS first year assessment & ongoing discounts
- Regional support & networking opportunities
- 50% off Part P notifications
- Other exclusive member discounts
- See even more member benefits at eca.co.uk/**journey**

info@eca.co.uk
0207 313 4800
@ECAlive

Join us online at
www.eca.co.uk/journey

Shaping our industry.
Enabling business growth.
Getting you specified.

Life at the edge

5G, the internet of things (IoT), machine-to-machine (M2M) communication and the advancement of autonomous vehicles are all driving the growth of edge data centres. Inside_Networks has assembled a panel of industry experts to examine whether this decentralised model is just the latest in a cyclical pattern, or if it's here to stay

Edge based computing has quickly grown from a niche application to one that has fundamentally changed that way that we think about data centres. According to the 2018 Uptime Institute Global Data Center Survey, more than 40 per cent of respondents expect their organisations will require edge computing capabilities.

As a rule of thumb, the further away the end user is from the data centre, the longer the period of latency and the exponential adoption of the cloud, the IoT and our predilection for watching streamed content via services like Amazon and Netflix initially drove this demand. Although these factors continue to influence the move to the edge they are also joined by machine-to-machine communication, the development of autonomous vehicles and the rollout of 5G.

5G will impact latency and the decision on where to deploy infrastructure and have important consequences for the evolution of the internet. 66 per cent of organisations have plans to deploy 5G by 2020, according to a new 5G use case and adoption survey by Gartner. Meanwhile, the new Visual Networking Index (VNI) by Cisco predicts that by 2022 more IP traffic will cross global networks than in all prior 'internet years' combined up to the end of 2016. In other words, more traffic will be created in 2022 than in the 32 years since the internet started. More than 28 billion devices and connections will be online and video will make up 82 per cent of all IP traffic. This means that the amount of data being stored in data centres will continue to increase dramatically and will continue to be deployed at the edge.

HOW DISRUPTIVE IS THE CURRENT TREND TOWARDS A DECENTRALISED EDGE BASED DATA CENTRE MODEL FOR THE OWNERS AND OPERATORS OF LARGER COLOCATION FACILITIES? DOES THE PROLIFERATION OF 5G, THE INTERNET OF THINGS (IOT), MACHINE-TO-MACHINE COMMUNICATION AND AUTONOMOUS VEHICLES MEAN THAT THIS DECENTRALISED MODEL IS HERE TO STAY?

We have gone from centralised to decentralised to centralised data centres and now with the edge back to decentralised. So the question the sector needs to ask concerns whether the edge is here to stay or if we will, one day, revert back to centralised facilities.

To that end Inside_Networks has assembled a panel of experts to discuss how disruptive the current trend towards a decentralised edge based data centre is.

Don't forget, if you have a question that you would like answered in Inside_Networks, **CLICK HERE** and we'll do our best to feature it.

MICHAEL WINTERSON
MANAGING DIRECTOR EMEA AT EQUINIX

The centre of data gravity is moving. Enterprise data is now not just within a centralised corporate data centre, but also out at the furthest edges of an enterprise network, located in a cloud service, or even captured and held on customer IT solutions. This is an IT model where an increasing number of interconnected things, digital platforms and real time user interfaces, generate more and more data traffic that can, and is, processed nearer to the device or user.

In today's world, the demands of mobile and digital users have increased significantly – they expect companies to deliver a high quality experience at speed. Currently, businesses that rely on the public internet are struggling to achieve this due to the sheer amounts of data in play. These companies are experiencing persistent end user performance issues, security concerns, unplanned IT costs and diminishing returns because their IT architecture is struggling to keep pace with business at the edge.

Businesses must rearchitect their IT for the digital edge because that's where customers, partners, employees and data are. It is where business happens, and it is why the decentralised edge based data centre model is here to stay. Converging trends in cloud, digital collaboration, mobility and the IoT means that the digital edge can be anywhere at any time. These trends are only set to grow and with the launch of 5G looming, companies need to be prepared.

This desire to process data closer to the user has two key constraints – cost and IT capability. The limit to pushing out to the edge is primarily a cost/performance equation – otherwise all data would already be disaggregated. There are many reasons why economies of scale make centralised or regionalised compute more effective. Furthermore, most enterprises need access to capabilities to rewrite applications and IT functions to operate in a distributed manner – this process will take time as the task is not a simple matter.

The edge based data centre model is no longer merely a trend, but more a requirement, as data centre providers that cannot offer a version of this will not be able to effectively keep up with demand. With the rise in data showing no signs of slowing down, a decentralised edge based data centre model is no longer a concept on trial, it is a necessity for all colocation providers, and one that enterprises need to embrace.

'Businesses must rearchitect their IT for the digital edge because that's where customers, partners, employees and data are. It is where business happens, and it is why the decentralised edge based data centre model is here to stay.'

HellermannTyton

End to End Fibre Solutions

HellermannTyton offer an extensive fibre connectivity range suitable for any application including data centres, commercial installs and the 'User End' of FTTX networks.

As well as a wide range of pre-terminated RapidNet fibre solutions, HellermannTyton manufacture a full end to end fibre solution including fibre patch panels, fibre patch leads, fibre connectors and adaptors along with a range of multimode and single mode cables.

Fibre solutions are available in single mode OS2 and multimode OM3, OM4 and OM5, and a full range of connection options including LC, SC and high density MTP.

Range includes:

- LC, SC and MTP Connections
- Simplex, Duplex and Quad Connectors and Adaptors
- Patch Leads and Pigtails
- Fan Outs
- Fibre Patch Panels
- Loose Tube and Tight Buffered Cable
- Pre-terminated RapidNet Fibre

For more information or to request your hardcopy of the new Connectivity Catalogue:

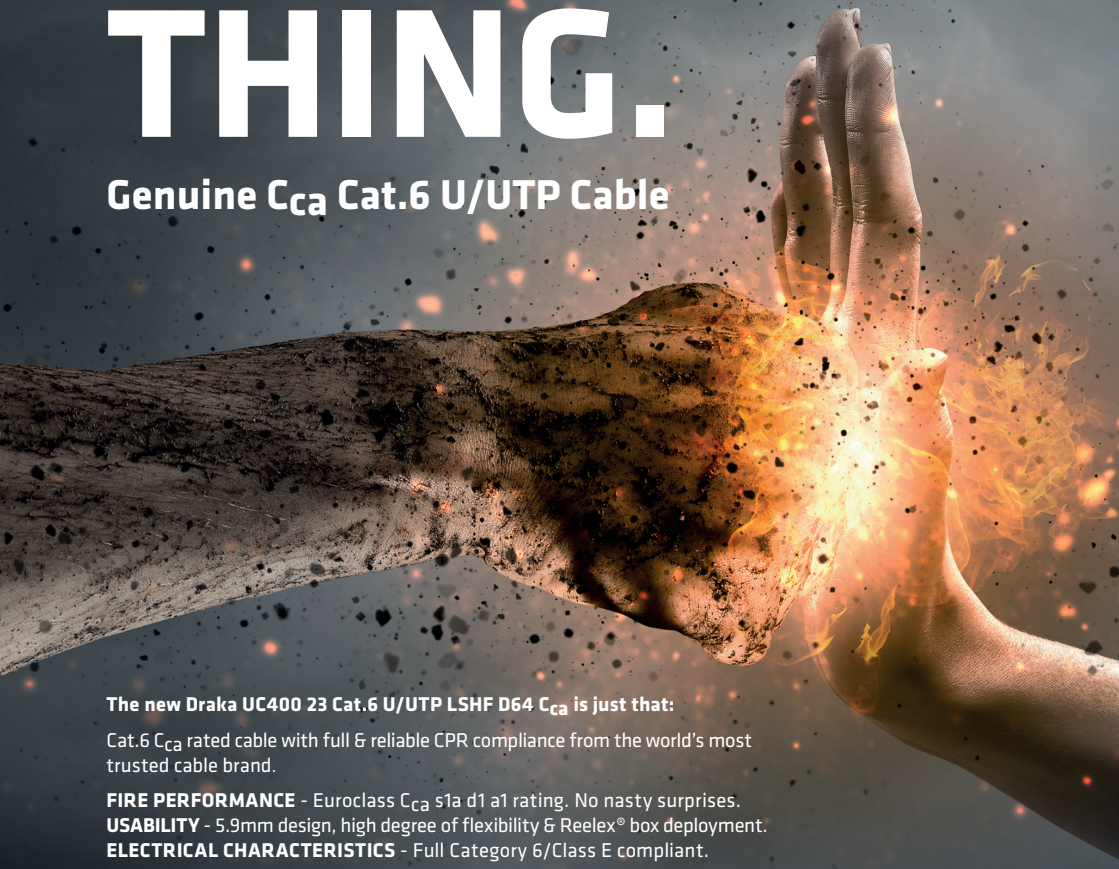
htdata.co.uk

AD-FIBRE-R12

Stay in touch with us!

THE REAL THING.

Genuine C_{ca} Cat.6 U/UTP Cable



The new Draka UC400 23 Cat.6 U/UTP LSHF D64 C_{ca} is just that:

Cat.6 C_{ca} rated cable with full & reliable CPR compliance from the world's most trusted cable brand.

FIRE PERFORMANCE - Euroclass C_{ca} s1a d1 a1 rating. No nasty surprises.
USABILITY - 5.9mm design, high degree of flexibility & Reelex® box deployment.
ELECTRICAL CHARACTERISTICS - Full Category 6/Class E compliant.

Keeps What It Promises!

draka.mms@prysmiangroup.com

Scan to find out more & download the white paper - CPR for Cables : How Safe is Safe?

Draka

A brand of the Prysmian Group

IAN BITTERLIN
CONSULTING ENGINEER & VISITING PROFESSOR AT LEEDS UNIVERSITY

The trend for edge is more hype than real – with everyone who makes a container based data centre calling it an edge solution. However, I think that they are ignoring the history of ICT capacity on the one hand and completely losing the plot on 5G.

What are edge facilities needed for? The answer lies in the question, IoT, M2M and autonomous vehicles – getting the ICT capacity close to the load to limit the backhaul data traffic to remote mega-facilities. If you add 5G as the access enabler then, perhaps, the need for edge will be driven by the need to put all the UHD video, 4KTV and all the other mobile applications close to the consumer with ultra-high bandwidth to cover the all the viral stuff that seems to drive the network load today.

The IoT, M2M and vehicles aren't connected to the colocation facilities now and probably never will be, whilst the high definition video access has already started with Google pushing the viral stuff into metropolitan areas by renting 1MW chunks in existing colocation facilities. So, on the face of it, what is the disruptive nature on colocation facilities? Not much. In fact, it could be that the colocation facilities are the ones who will actually invest in the 5G rollout.

But I think that the hype-makers of today have missed the point about how 'small' edge data centres will be. You see adverts for 100kW, 200kW and 500kW micro-modular facilities that have been rebranded as 'edge', but my contention is that edge will be 1kW of ICT located every 500m in city centres, and then reduce by 30-40 per cent per year – all based on Moore's, Koomey's and all the other development curves and laws that we have seen over the past 20 years.

So, is decentralised here to stay? Yes, very probably, but don't forget that we have been here before. The first generation of mobile phones were Class 1 radio transmitters fitted in cars with one big aerial in each city centre. Then came the containers with 10kW of hardware, DC power, batteries, aircon and a mast. Then the container shrunk to a single cabinet with 2kW of load, a bit of passive air cooling and the aerial strapped to a lamppost. Then the small cabinet of street furniture at the end of your street connects fibre to the home. It's all about getting faster/wider access at rapidly falling power demand.

'So, is decentralised here to stay? Yes, very probably, but don't forget that we have been here before.'

STEVEN CARLINI

VICE PRESIDENT OF INNOVATION & DATA CENTRES AT SCHNEIDER ELECTRIC

Data centre architectures have been evolving for cloud, colocation and enterprise for some time. However, cloud providers are now migrating closer to end users in order to improve their experiences.

The first wave of hybrid cloud, for example, went into urban colocation facilities, as they were already in place or under construction and the planning, permitting and deployment process is quite long.

The next step will be use of smaller edge computing systems (1-2 racks) with mini-cloud stacks that can be placed anywhere – this could be on premise at the point of use, at the customer site, or indeed housed in a nearby colocation facility. Another consideration is the growing trend towards large colocation operators using smaller 'local edge' facilities – those that are deployed even closer to the users.

5G will be a collection of small zones, or cloud clusters, operating together to deliver the fastest possible connectivity speeds, but also as part of a larger, integrated network. However, in order for 5G to be a success, telco service providers need to deploy a brand new data centre architecture that can only be enabled via edge computing. Due to both the large infrastructure volume and its accompanying expense, standardisation of these edge solutions will also be key.

Overall, the current decentralised data centre architecture of central, regional/metro edge and local edge is very similar that of cloud computing. 5G, for example, is a software defined technology that runs on standard IT servers across this edge ecosystem. However, it is still unclear as to who will build out such a large number of local edge data centres – this could be hundreds of thousands or even millions worldwide, hence the high anticipated cost. The interesting part is that once these edge facilities are in place they can technically be used for IT functions and mobile edge clouds at the same time, opening up opportunities for hyperscalers to step into the service provider space.

While the build out at the local edge has been somewhat slower than predicted, edge applications for retail, agriculture and fast food restaurants are growing quickly. The next wave of localised cloud computing is coming soon and could be combined with telco 5G functions to create a unified data centre architecture comprising localised, centralised and decentralised edge computing solutions, which are dependent on one another.

'While the build out at the local edge has been somewhat slower than predicted, edge applications for retail, agriculture and fast food restaurants are growing quickly.'

HUBER+SUHNER
Excellence in Connectivity Solutions
IANOS®

The ***NEW*** IANOS 12-fiber single-size module with two-layer fiber management.

- 12 x LC splicing
- Fast splicing and reduced coiling time
- Lid with fiber identification
- Quick access to fiber
- Quick fix cable fixation for incoming cables (2, 3 & 5 mm)
- Suitable for 5 mm conduit
- Bend radius control throughout (min. 30 mm)
- Fiber over-length storage with integral heat shrink or optional sandwich splice comb
- Available in Singlemode OS2 and Multimode OM3/OM4 performance
- Compatible with all IANOS chassis types
- Colour coded LC adapters by performance
- Ideal for Co-Location Environments

For more information about the Huber Suhner IANOS solutions Dunasfern offer

Call 01908 282200
E-mail enquiries@dunasfern.com
Visit www.dunasfern.com

DUNASFERN
Inc. AURIGA

Netscale Solutions
Delivering the highest fibre density

R&M's Netscale solutions combine unmatched fibre cable management with automated connectivity tracking and an innovative tray design to deliver the world's highest port density for 10/40/100G Ethernet.

For more information and further details about the highest 10/40/100GbE density of any fiber solution out there, visit **www.rdm.com**
Reichle & De-Massari UK Ltd
+44 (0) 203 693 7595

R&M

CARRIE GOETZ

GLOBAL IT EXECUTIVE, KEYNOTE SPEAKER AND CONSULTANT

It's crazy how cyclical this industry is! Centralised, decentralised, centralised and now some more decentralised resources due to edge computing. One important note is that much of the information expected to reside and process at the edge may never hit the centralised location. The volume of data, the lack of need to retain that data, and latency simply wouldn't support processing these mass volumes at a central location. In many cases the decentralisation started a long time ago via colocation and cloud providers.

What edge does disrupt is available services in Tier 3, 4, 5 and upward cities that have long been ignored or underserved by cloud and colocation providers. As demand for edge services grows, the size of the edge locations will grow to follow.

The hype around 5G is certainly evidence of the demand for growing bandwidth needs across all platforms, sites, and services. However, I firmly believe that 5G is only a small part in solving the bandwidth demand. Fibre to the X (FTTX) will fill in some gaps, with machine-to-machine working in close proximity from source to the receiver. Blockchain is another example of an edge application that will require resources outside of a central location.

I think actual disruptors for colocation providers will be the size of data halls and the models under which they lease their space. I also think there are massive opportunities for smaller players in the market and consortiums formed by utilising unused corporate data centre space. There is a lot of space and capacity that was regained through applications moving to the cloud and virtualisation projects.

There is also a unique market opening for pre-engineered data centres of a smaller size – whether they be containers or pre-engineered buildings. As edge spreads quickly, the market and vendors will need to react with rapidly deployable resources to meet the compute needs. I do not doubt that some applications will demand storage for at least some period, while others will compute and release resources.

'What edge does disrupt is available services in Tier 3, 4, 5 and upward cities that have long been ignored or underserved by cloud and colocation providers. As demand for edge services grows, the size of the edge locations will grow to follow.'

SIMON BEARNE
COMMERCIAL DIRECTOR AT NEXT GENERATION DATA (NGD)

While we will certainly see a gradual shift to include micro-modular data centres closer to the edge of the network, larger, fit for purpose colocation facilities will still thrive at the centre. Without doubt the decentralised edge computing model is going to become increasingly pivotal in enabling the delivery of the IoT, 5G, AI, autonomous vehicles and more, but so too are strategically located core data centres with high speed connectivity, scalability and huge amounts of forward power.

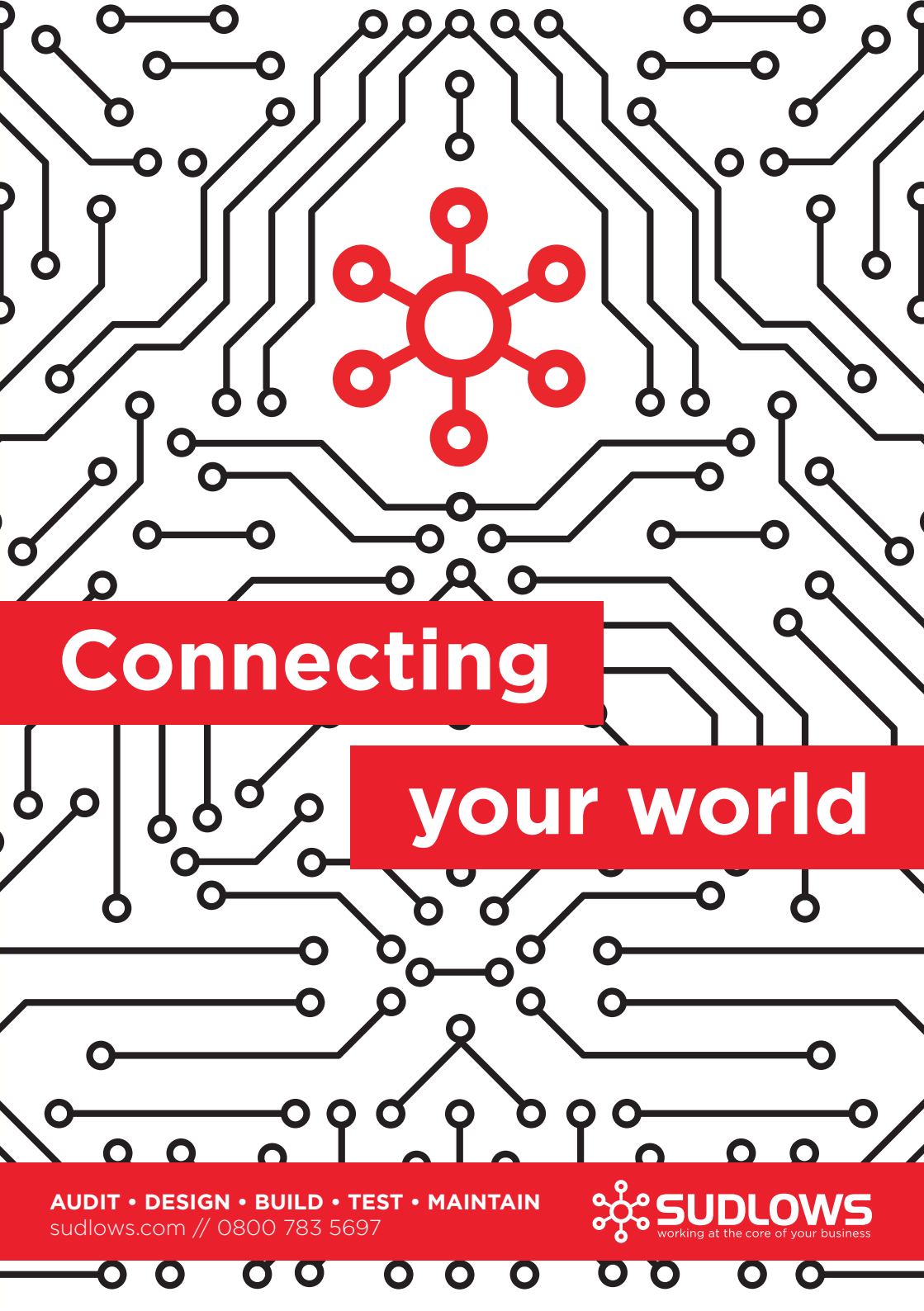
In many cases, edge based data centres will be best placed for capturing and processing essential real time operational data from or about devices and 'things' in the field – be they on a drilling platform, factory floor, driverless car, or in specialist medical equipment. This is essential for interactivity and the kind of decisions which need to be taken 'in the moment'. Clearly, latency must be extremely low and distance is inextricably linked to this.

However, there are also large volumes of data which are equally vital but either cannot, or do not, need to be stored and processed at the edge. Larger, scalable core data centres capable of hosting powerful cloud based analytical systems are therefore equally necessary for handling very high throughputs of large batches of complex big data, where low latency and security are essential which, in turn, demands direct connection to hyperscale cloud provider infrastructure.

The ability to cluster multiple servers comprising thousands of Tb/s for the storing and subsequent processing of billions of files will also become a prerequisite. In other words, high performance computing (HPC). But at this time there are few colocation providers who understand the specialised needs for HPC, with the space, power, cooling and connectivity necessary to support clusters of very high density server racks.

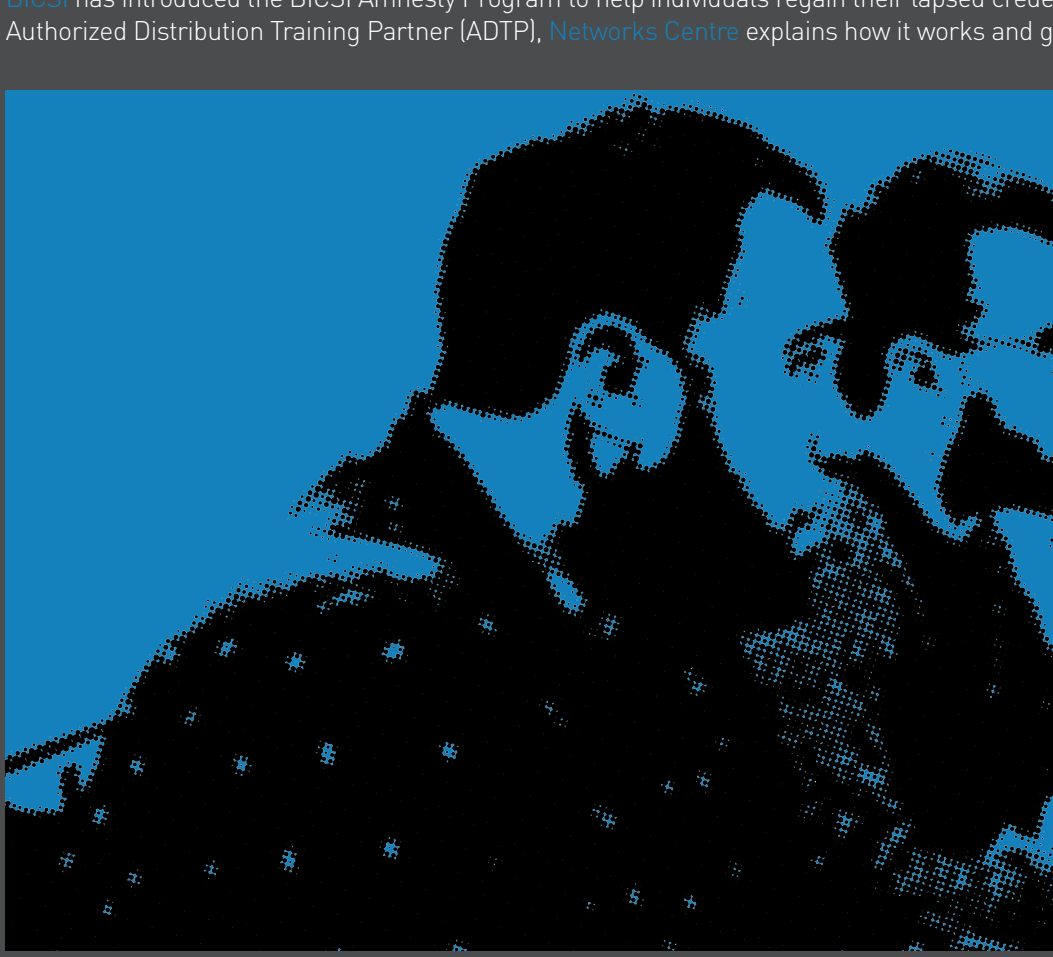
Moving forward, we can expect to see large facilities with sufficient power and scalability supporting and complementing the needs and activities of distributed micro-modular data centres – coexisting as essential pillars under a cohesive and flexible cloud based infrastructure. For users and organisations to fully accept distributed edge micro-modular data centres, however, they must be confident in receiving similar levels of data security and privacy to modern centralised facilities.

'We can expect to see large facilities with sufficient power and scalability supporting and complementing the needs and activities of distributed micro-modular data centres – coexisting as essential pillars under a cohesive and flexible cloud based infrastructure.'


Connecting
your world
AUDIT • DESIGN • BUILD • TEST • MAINTAIN
sudlows.com // 0800 783 5697
SUDLOWS
working at the core of your business

Kick start your BICS

BICSI has introduced the BICSI Amnesty Program to help individuals regain their lapsed crede
Authorized Distribution Training Partner (ADTP), Networks Centre explains how it works and g



BICSI views learning as a life-long endeavour and places a great deal of emphasis upon continuing education as part of maintaining credentials and certifications. This accords with most professional bodies in other industries.

Driving seat

Typically, information and communications technology (ICT) professionals who study and sit their BICSI exams are usually dedicated and driven individuals, and their professional credentials are a life-long commitment. As such they are not taken on lightly.

Those that achieve BICSI accreditation often go on to major career achievements and many have reached senior positions in their companies. Such is the power of knowledge, especially when it has

SI credentials

ntials without testing. As BICSI's sole European uides you through the process

BICSI®

NetworksCentre.

global recognition and is centred at the birthplace of the lead country in the development of ICT Networks – the United States of America.

There is no other accreditations in our industry that are revered in quite the same way as those from BICSI – whether Technician, Designer, Project or Operations Manager. It's not just about the excellence of the training or the kudos that certification brings, though that is undeniably part of it. It is the belonging to a global ICT community that provides career long support from a not-for-profit organisation with a pedigree spanning more than 25 years.

Many organisations have tried to emulate the success of BICSI and meet a gap in the market for 'safety net' accreditations but these are private

businesses. They cannot resource the standards development work, the conferences, publications and Continuing Education Credits (CEC) programme in the depth that BICSI does, with its global partner network.

Another critically important point that differentiates BICSI is that the course material is independently reviewed and verified. In the case of exams, they are independently adjudicated. Most other non-BICSI training and certification in our industry is self-regulated, which is quite different.

'Keeping up with the CECs needed to renew a credential can be a difficult endeavour. BISCI's amnesty reinstatement opportunity can help by allowing lapsed credential holders to regain their credential by either retesting or providing documentation, attending one class and paying the reinstatement fee without testing.'

Betsy Conroy – chair of BICSI's Education Advancement Committee

Why is this important?

BICSI's approach gives employers confidence that the person they employ to design, project manage or install their critical infrastructure will have the requisite skill-set to carry out their duties. This is assured not only on day one, but will be guaranteed ongoing, as maintaining the qualification will require continuing education to ensure the credential holder stays abreast of changes in standards and practices.

For those who have gained a BICSI certification and achieved in their industry, demands on their time can increase substantially. These professionals are in high demand. Consequently it can be challenging to maintain the requirements of continuing education.

As we know our industry is constantly evolving and it is essential to top-up knowledge. There are many opportunities to do this that are recognised by BICSI as detailed in its CEC Programme Policy. One of the most popular ways to keep topping up CECs is to attend online webcasts. These are available on a regular basis and can be viewed on demand.

Re-certification is more than just renewing a credential – it encourages credential holders to keep pace with new ideas and practices that can help them succeed. BICSI has many approved programs such as the BICSI RCDD, DD102 course – the most sought-after design credential to hold in the network cabling industry.

Unfortunately, becoming a victim of your own success can mean that the time available for continuing education gets squeezed. Working on a long-term, time-bound project, or a life event such as starting a family, can all mean that the time available to gain the necessary CECs is compressed and it becomes a mountain to climb. Many high achieving professionals find themselves in this

position at some time in their career.

BICSI has recognised this and have introduced an amnesty as part of their 2020 credentialing programme for those whose credentials lapse.

Why re-certify?

- Boost your competencies and stay on top of emerging ICT industry trends and technologies
- Propel your professional achievements by positioning yourself as a leader among your peers
- Advance your career with newfound knowledge and emerging job opportunities

How does the amnesty work?

It is a one-time programme that is applicable if a BICSI credential is lapsed for up to two terms past the original expiration date, for example, six years. If certification lapsed less than six years ago then the amnesty is valid and a re-sit of the relevant exam is not essential to re-certify.

Individuals who fall into this category will still need to attend the relevant training as indicated in the Credentialing Reinstatement Flyer 2019. As well as completing the training, the BICSI member must also support their application with evidence that during the lapsed period they have been doing work of the nature that is associated with the credential. At the end of training the exam does not need to be taken, so long as the other criteria above are met.

Here to help

Networks Centre is BICSI's sole European Authorized Distribution Training Partner (ADTP) and Authorized Training Facility (ATF). Based in the south east of England, the company has a large modern dedicated facility to cater for both classroom and practical elements of training. Details of the current BICSI training programme can be found on the Networks Centre Training Academy website, which is continuously updated.

As you would expect there are strong links between reputable manufacturers of structured cabling, BICSI and international standards bodies. As an American National Standards Institute (ANSI) accredited, consensus based standards development organisation, The BICSI International Standards Programme creates standards and guidelines for use in the design, installation and integration of ICT. ANSI is very closely associated with ISO and many standards are common to both bodies. This close association with code and standards writing bodies around the world further assists the ICT community in delivering safe, efficient and effective products, systems and services.

Time for action

BICSI believes that continuous knowledge and competency enhancement advances not only an ICT professionals' career but also their organisation, and the ICT industry as a whole. Whether you are just starting out in the industry or are lapsed and need to re-connect with the global ICT community of professionals, there is no better time to take the next step to stand out from the crowd.

You can **CLICK HERE** to find more information about the BICSI Amnesty Program on Networks Centre's website or **CLICK HERE** to email a member of the Networks Centre Training Academy.

By popular demand

Dieter Studer of R&M examines how developments in optical fibre cabling are helping to meet the needs of today's data centres

Demand for fibre in data centres is rapidly increasing, as hunger for bandwidth and electronic services continues to grow. Today's hyperscale data centres rely on optical fibre to handle external and internal traffic and the fibre industry needs to keep up with the demands of Tier 1 players. We're seeing innovations in cable design, fibre construction and connectivity, product lifecycles being reduced from years to months, and new installation practices challenging designers and installers.

NEED FOR SPEED

High fibre count cables are commonly used in large scale data centres to handle extreme computing needs in limited pathway spaces. A few years ago, an 864 fibre cable would have been considered a very large trunk, yet common fibre counts today include 1,728, 3,456, and 5,184, with 6,912 and 7,776 fibres on the horizon.

The need for more cable in limited duct space has pushed manufacturers to develop smaller cables. Innovations such as rollable ribbon allows more fibres to be packed inside of a cable and eliminates some of the loss problems with bending a flat ribbon. Most cables now are dry blocked, as gel water block in a cable takes up too much valuable space. Manufacturers have also moved to 200µm buffered fibres to allow for 30 to 40 per cent more fibre in a cable. Cables with slotted cores or with little or no bundle separation, and innovative designs that repackage flat ribbons into a smaller diameter, are appearing.

WAYS AND MEANS

Data centre operators are figuring out different ways of bringing fibre into facilities. Indoor singlemode demarcation is trending, while street access and traffic control are not necessary if a high fibre count cable can land inside a building. This scenario also tends to be more secure and tamperproof. Indoor rated cables can radiate from the cabinet and go directly to the top of the rack and

building entrance facility cabinets are now designed to be stacked vertically to increase splice capability without using too much horizontal wall space, which is often limited.

High density panels, saving rack space inside the data centre, are also becoming commonplace. Just a few years ago, a standard fibre patch panel would be a static 4U unit with 144 fibre terminations and SC duplex or 288 fibre termination with LC duplex adaptors.

PORT OF CALL

Many manufacturers have developed high density offerings that employ slides and special patch cables to allow access to the ports. Panels with up to 240 fibre terminations for LC duplex per 1U have been introduced. These rely on multi-fibre push on (MPO) trunks to an LC breakout module and slide based high density fibre patch panels. Some users have bypassed the use of LC duplex terminations in favour of using MPO ports.

To reach this high port density, panels are designed with sliding or swing trays. The cable slacks are captured in a cabling manager that ensures the safe movement of the sliding tray for maintenance or extension. Considering the given location conditions, data centre infrastructure managers may evaluate static fibre distribution units with a lower port density. Static panels are generally fed by high count fibre trunks that are ribbon spliced within the unit to pigtails going to the ports.

Because the trunks are spliced within the panel, cut to length pre-terminated MPO trunks are not required. Plus, these static cabinets can be used as fibre distribution units (FDUs). An incoming cable into the data centre can be terminated into it without having to transition at the main point of entry (MPOE). This is useful if the cable is run in metal conduit, if the cabinet runs less than 50ft inside of the facility, or if the incoming cable is an indoor/outdoor design.

SKILL SET

An argument against splicing into a fibre management system is that it requires specialised skills and a ribbon splicer. Testing is still required in both splicing and installing MPO trunk scenarios and ribbon splicing may be required when installing trunks to make repairs.

Working with large count roll able ribbon cables and panels requires new skills and equipment. When breaking out a large count cable, technicians need to be more careful, organised and aware of what they are doing. It is easy to mix up different fibre

'Innovations such as rollable ribbon allows more fibres to be packed inside of a cable and eliminates some of the loss problems with bending a flat ribbon.'

bundles when breaking out a 3,456 fibre cable. A damaged fibre during breakout will often require the technician to start over.

Some companies have developed toolless fibre bundle sheath removal to help eliminate this problem. Once the fibre bundles are identified, they need to be furcated with a protective sock or tubing. These furcated bundles need to be housed in a breakout kit, which will keep them protected from being twisted or kinked. Labelling fibres, furcated bundles and splice trays is necessary for a quality job.

NEW APPROACH

Working with large count cables in data centres requires a new approach. An installer will need more launch boxes and test cables, for example, and a damaged test lead will have to be replaced immediately to meet deadlines. The installer may consider using a fibre optic switch in conjunction with their optical time domain reflectometer (OTDR) and optical loss test set (OLTS) to test MPO terminations. Due to the large quantity of ports that have to be tested, additional test equipment and personnel are often required.

Many data centres do not allow cloud connected test equipment on the premises or recording devices. One solution is to simply leave test equipment on-site upon completion of the job. This creates calibration issues and drives up the job cost. A partial solution may be to leave the test equipment mainframe and remove the optical heads, which contribute significantly to equipment cost.

Traditionally, fibre installations are tested bidirectionally with an OTDR and OLTS. Due to security and time restraints, some data centres have elected to use patch panels perturbed and pre-tested with a high count fibre pigtail. This allows the installer to install a cabinet in a rack and to pull the high count fibre pigtail to a different location outside of the secured area to splice to an incoming trunk cable. This eliminates splicing or MPO termination time on-site in the secure area. Testing usually is not performed at the secure location unless a problem is encountered and OTDR testing is

performed from the non-secured end, which is spliced to the trunk cable.

SPECIAL EFFECTS

Specialised fusion splicers are required for splicing high count cables. As cable technology advances, installers will have to deal with flat ribbons, rollable ribbons, 200µm buffered fibres, and splicing 200µm ribbons to other 200µm or 250µm ribbons. This will entail specialised fusion splicers for handling 200µm to 200µm and 200µm to 250µm ribbon splicing, as well as different heat strippers and ribbon fibre holders. Equipment purchase is the easy part of working with new cable designs – finding the right personnel and training them tends to be more difficult.

Transmission speeds and formats are changing the way fibre is managed in today's data centres. Many systems use parallel optic transmission to reach required speeds. For instance, some 100Gb/s multimode systems require 20 fibres of a 24 fibre MPO connector port. Other systems use higher speed modulation and wave division multiplexers to add additional traffic on to fewer fibres.

GOLDEN OPPORTUNITY

Installers will need to be capable of working with many new technologies and techniques. Those who have mastered these technologies will realise that there are many opportunities, as data centre operators are looking for organisations that can support their growth. ■

DIETER STUDER

Dieter Studer is in charge of the R&M USA marketing department, driving revenue growth in markets for data centre, office cabling and public networks. Before his appointment in the US he was developing global key accounts at the R&M headquarters in Switzerland.

VERSIV™
Cabling Certification System

WE CUT YOUR CERTIFICATION COSTS BY **65%**!

219 cabling contractors. 30 days. 500,000 links. Their report? Our Versiv Cabling Certification System cut their certification costs by 65%. Versiv's innovative design delivers massive cost reductions, making your business more competitive and increasing your profits.

Curious about saving 65% on your certification costs? Click here.

FLUKE networks®

Excel Networking Solutions

Excel Networking Solutions' Passive Optical Network (PON) Solution offers a comprehensive selection of products to make fibre services available across FTTX and passive optical LAN (POL) network infrastructure systems.

Excel's PON Solution provides numerous benefits compared to a traditional LAN installation including improved energy efficiency, easier network management, reduced reliance on physical equipment and space and cost saving benefits, with a considerable increase in capital and operational expenditure savings.

Comprising a selection of Environ enclosures designed specifically for small spaces, along with a variety of splitters, panels, splice enclosures and distribution boxes, the comprehensive range of products makes the PON solution suitable for a range of applications across many vertical markets.

To complement Excel's PON offering, a selection of specialist fibre cleaning products feature a patented technology for clean connections – first time, every time.

For more information about the Excel PON Solution, **CLICK HERE** to download a copy of the latest PON Product Guide **CLICK HERE.**

www.excel-networking.com

HellermannTyton

HellermannTyton offers an extensive optical fibre connectivity range suitable for any application including data centres, commercial installs and the 'user end' of FTTX networks.

As well as a wide range of pre-terminated RapidNet fibre solutions, HellermannTyton supplies a full end-to-end fibre solution including fibre patch panels, fibre patch leads, fibre connectors and adaptors, along with a range of multimode and singlemode cables.

The pre-terminated RapidNet fibre system is available as standard in singlemode and multimode formats. The RapidNet fibre cassettes offer a choice of connectivity options including LC, SC and MTP in cassette to cassette, cassette to fan out, or cassette with MTP connectors on the rear.

With fibre solutions available in both singlemode and multimode, including the new Hyperscale 8-Fibre solution, and a full range of connection options including LC, SC and high density MTP, the fibre range from HellermannTyton caters for any project of any size.

CLICK HERE for more information.

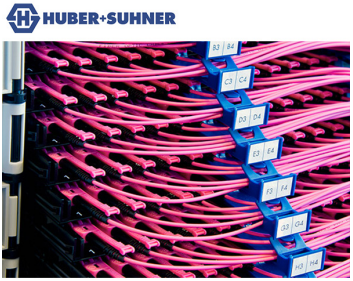
www.htdata.co.uk

EDP Europe

EDP Europe is a stock holding distributor of fibre optic cabling solutions from Huber+Suhner.

Huber+Suhner is a leading manufacturer of premium fibre optic products including installation cable, patch cords, pre-terminated trunks, fibre trays and modules. It also produces advanced high density fibre management solutions including space-saving optical distribution frames (ODF) and the 19-inch rack mount IANOS system for next generation connectivity.

IANOS is built around MPO/MTP backbone infrastructure and facilitates an easy upgrade path to future 40Gb/s or 100Gb/s networks. When IANOS is combined with Huber+Suhner's LC-XD patching cables the end result is a flexible, high density patching system with fast access to connectivity. Huber+Suhner's LC-XD connector has an extended extraction finger for improved handling and identification of connections, ideal for high packing densities, along with the ability to easily flip the polarity of the cable in the field. It is available in various lengths from stock in OS2, OM3 or OM4 fibre types.



CLICK HERE to find out more, call our sales team on 01376 501337 or **CLICK HERE** to send us an email.

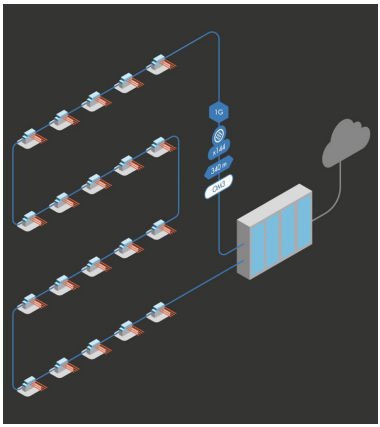
www.edpeurope.com

Nexans

Nexans' new Micro-Bundle Universal (MBUN) cable range has extractable features over 2m, making it ideal for fibre to the office (FTTO) type installations.

MBUN cables are available in singlemode and multimode in 48, 96 or 144 fibres. The 48 and 96 fibres have a Construction Products Regulation (CPR) Euroclass rating of B2ca, while the 144 fibres is Cca. For an FTTO installation Nexans recommends using singlemode or multimode OM3 cables.

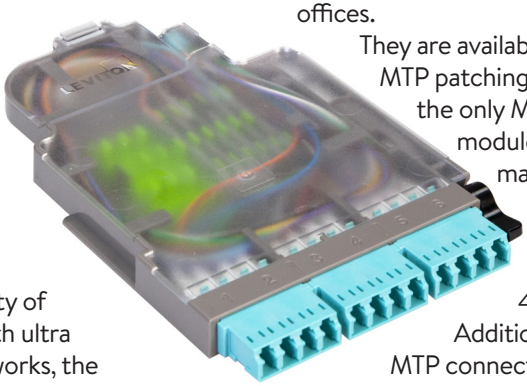
MBUN cables can be installed indoor or outdoor in a duct. Each MBUN cable is made of individual micro-bundles housing 12 fibres each and surrounded by watertight glass yarns. The cable's outer sheath is made of LSZH and glass yarns reinforcement provides protection against rodents. Singlemode cables have an outer sheath in yellow colour versus aqua for multimode cables.



CLICK HERE to discover the new MBUM cable range.

www.nexans.co.uk/LANsystems

Leviton



The HDX Fiber Splice Modules from Leviton bring field splicing to ultra high density networks, making fibre optic network deployment easier, cleaner and safer.

Merging the flexibility of field fusion splicing with ultra high density fibre networks, the modules are optimal for wide area networks (WAN), campus environments, high count riser buildings, government installations, data centres and central offices.

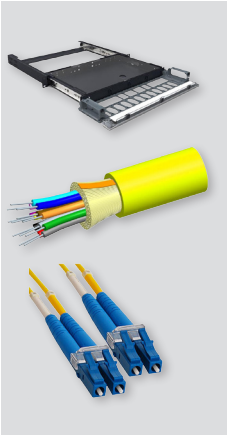
They are available for LC or MTP patching, making them the only MTP splice modules on the market – opening up network migrations up to 400Gb/s.

Additionally, three MTP connectors provide patching options for 8 and 12 fibre connections and transceivers.

To find out more **CLICK HERE.**

www.leviton.com

Comtec



Comtec holds over one million meters of fibre cable in stock including Eca, Dca, Cca and B2cam cable, with core counts from 4 fibre to 96 fibre. We stock leading brands CommScope (NETCONNECT and Systimax), Nexans, Draka, HellermannTyton, Siemon, Molex and our own brand, Ultima.

We offer an extensive range of fibre optic panels, pigtails, patch leads and accessories in multimode OM1, OM2, OM3, OM4 and singlemode OS2 variants including bend insensitive fibre leads. Custom pre-terminated fibre assemblies are available in all standard formats including loose tube, tight buffer, hydra break-out, flattwin and MTP/MPO.

For fibre containment we have CommScope FibreGuide and Siemon Gigaduct. Fibre tooling, installation consumables, media converters and test and measurement equipment complete the portfolio.

To find out more about the fibre range available from Comtec call 01480 415000 or **CLICK HERE** to visit our website.
www.comtecdirect.co.uk

Fluke Networks

The OptiFiber Pro High Dynamic Range (HDR) optical time domain reflectometer (OTDR) from Fluke Networks is the first OTDR that fulfils demands for a single solution to deal with a range of applications – from FTTX, passive optical networking (PON) and data centres to structured cabling.

The OptiFiber Pro HDR OTDR is designed to support the growing need for an OTDR able to test and document HDR applications supporting outside plant (OSP) back-haul and long-haul services, peer-to-peer (P2P), PON and fibre to the premises installations. Three singlemode modules address 1490nm, 1625nm and combined 1310/1550nm, with a dynamic range of up to 42dB, allowing users to find more faults over longer distances.

Fluke Networks' modular Versiv Platform is the basis of the OptiFiber Pro OTDR solution. All Versiv models work with LinkWare PC reporting software and the LinkWare Live cloud-connected certification service.

To find out more **CLICK HERE.**
www.flukenetworks.com

ORTRONICS®

FIBRE TRUNK CABLE SYSTEMS

A FIBRE TRUNK CABLE SYSTEM FULLY CONFIGURABLE TO SUIT YOUR DESIGN PERFECTLY.

Our pre-terminated fibre trunk cable assemblies offer a streamlined approach to network design by reducing the number of individual components in the structured cabling system.

The trunks are fully configurable and available with a variety of cable and connector configurations. These trunks are ideal for the following applications:

- Data Centre
- LAN
- Building Networks

FEATURES AND BENEFITS:

- Simple design process with two performance levels
- Fully configurable and available with a variety of cable and connector combinations
- Typically supplied on tight buffered fibre cable
- Easy and fast installation due to lightweight product
- Minimal packaging makes disposal and clean up easy once project/install is complete
- Limited lifetime product warranty
- Cost-effective option, resulting in an improved project ROI
- No specialist tools required on site
- Manufactured to industry standards and pre-tested before deployment

CONFIGURE TO SUIT YOUR DESIGN

Fibre Tails

Options include both staggered and fan-out configurations

Fibre Length

There are two ways to specify the length:

Overall length of pre-terminated gland to gland or overall length of pre-terminated tip to tip

Other Configuration Options Include:

Fibre Type	Cable Specification	Connector Options
OM1	Tight Buffered	LC
OM2	Loose Tube	SC
OM3	Breakout	ST
OM4	—	FC (UPC)
OS2	—	—

Dishing the dirt

Mark Mullins of Fluke Networks looks at best practice when it comes to cleaning and inspecting multi-fibre push on (MPO) connectors

MPO connectors have long been a staple for interconnection within data centres. They allow quick and easy connection of fibre trunks, which have become essential for high speed technologies such as 100 Gigabit Ethernet. Lately, they are beginning to appear in more locations outside the data centre, such as in multiple dwelling units and even in enterprises, connecting the data centre to distribution points closer to the end users. Meanwhile, fibre to the antenna (FTTA) for 5G applications will require high bandwidth fibre – a prefect application for MPOs.

SETTING THE STANDARD

MPOs are referenced in two TIA/EIA Fiber Optic Connector Intermateability Standards (FOCIS). FOCIS 5 specifies one or two rows or 12 connections, while FOCIS 18 offers one or two rows of 16 connections – see Figure 1.

Both utilise the same footprint, but with slightly different physical characteristics that prevent one from interconnecting with the other, which is handy, since the fibre spacing is somewhat different and the two are incompatible. MPO connectors include pins and alignment holes to make sure the endfaces of the fibre align precisely. Note there are other, non-standard configurations that can support as many as six rows of 12 for a total of 72 fibres.

FOCIS 5 connectors are by far the most widely used – FOCIS 18 is a future ready technology that will allow higher density but is so far rarely deployed. Since high speed Ethernet tends to aggregate eight fibres together, many FOCIS 5 implementations use only eight of the 12 connections – sometimes leaving two on each edge of the row unused, or four in the middle unused.

Most customers purchase pre-configured MPO cables to their specifications. There are a number of common implementations for the cables:

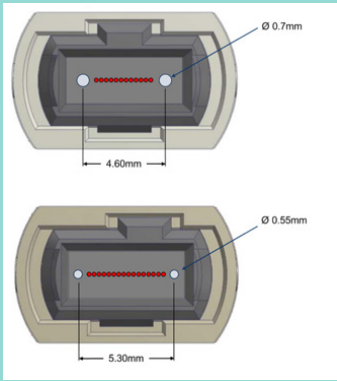


Figure 1. Single-row versions of FOCIS 5 and FOCIS 18 connectors. Note the difference in the key position (centered in the FOCIS 5, offset in the FOCIS 18), and pin size and spacing

- Pre-terminated end-to-end connections. The customer specifies the exact configuration and length of the MPO-to-MPO trunk. In many cases, these are plugged into cassettes where the fibres are broken out into individual connections, such as LCs.

- Single ended connections with an MPO on one end and individual unterminated fibres on the far end. This more flexible

approach allows the user to splice the fibre to their connection on the other end.

LOOK CLOSELY

MPO connections, like any fibre connections, are susceptible to contamination on the endface. Contamination is widely recognised as the number one cause of fibre failure. MPO contamination is a bigger concern than on a single fibre, as a single contaminant can affect multiple links, or higher speed critical trunks.

An MPO also has many times more surface area that can collect contaminants, which can then migrate around the connector, blocking multiple connections, creating an air gap that can cause reflection issues and even damaging other MPO cables. Since most MPO cabling is either custom made or custom installed, replacing a damaged one is a lot more complicated than grabbing an off the shelf replacement.

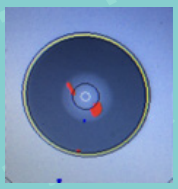


Figure 2. A customer-supplied automated inspection image of an 'out-of-the-bag' fibre. Contaminants are marked in red and blue

And don't think you can neglect to inspect when installing new MPO connections using cables straight from the factory. Installers report that a significant number of new MPO trunks have enough contamination to affect performance and even manufacturers advise that you check their work.

CLEAN AND TIDY

The general methodology for ensuring clean fibre connections is that same for MPOs as it is for any other fibre – any time you're connecting a fibre, inspect and, if necessary, clean and inspect again.

Until recently inspecting MPOs involved using X-Y translators with a standard single strand fibre optic microscope. Turning one knob to move from left to right across the fibres and another to switch between rows resulted in a time consuming process where it would be easy to miss an endface. Thankfully, cameras designed expressly for inspecting MPOs are now offered, simplifying and speeding the process.

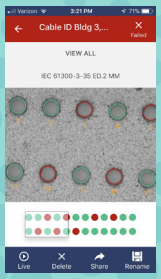


Figure 3. Automated MPO inspection screen. Note the numbering of each fibre, and indication of passing (green) and failing (red) fibre

These models allow a detailed view of each individual fibre and can also grade them with a pass or fail result based on IEC 61300-3-35, eliminating human error, although that process can take up to a minute – see Figure 3.

Automated inspectors also make it very easy to generate a report for the endface if documentation is required. Some models can provide a view of the entire endface in real time, eliminating the need for a longer automated inspection when the connector is obviously dirty, and allowing the user to see if contamination is present in an area away from an endface. Remember, that contamination can migrate to a more disruptive spot when the connector is plugged in – see Figure 4.

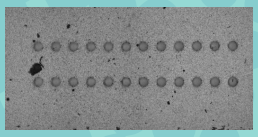


Figure 4. Cameras that display the entire endface can show potential issues such as the large particle between fibers 1 and 13. It's not blocking anything here, but a very slight move could change that

'The general methodology for ensuring clean fibre connections is that same for MPOs as it is for any other fibre – any time you're connecting a fibre, inspect and, if necessary, clean and inspect again.'

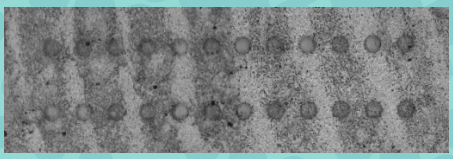
Figure 5.

TOOLS OF THE TRADE

Pen type cleaners designed for cleaning MPOs are the first choice for cleaning MPO cables and ports – see Figure 5. A cleaning cloth rotates when the tip of the cleaner is pressed to the endface of the MPO, cleaning it. Just like with single fibres, pen type cleaners are the fastest and easiest way to deal with dry contaminants such as dust and fibres. Usually a click or two are all it takes for a completely clean endface.

Wet or oil-based contaminants, such as fingerprints – see Figure 6 – are much less common, and stubborn as well. Like a single fibre, a wet cleaning approach is recommended. However, because of their larger area and pins that can interfere with typical cleaning lint free wipe, an alternative wet cleaning approach is recommended.

Figure 6. Fingerprint oils on an MPO endface



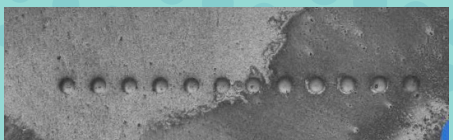


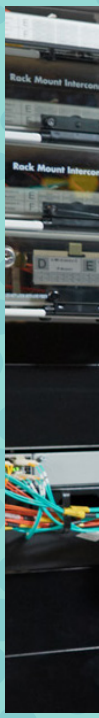
Figure 7. Results of cleaning an MPO port with a wet swab and then drying with a second swab. Too much solvent makes it hard to satisfactorily clean and dry the port

The first rule of wet-cleaning MPOs is to use a solvent designed for the purpose. Isopropyl alcohol and other non-recommended cleaners can leave residue behind and end up with a worse situation than you started with. The second rule is to limit the amount of solvent used – see Figure 7.

Your trusty pen cleaner can be used for this purpose in conjunction with a cleaning wipe or cube. First, click the pen cleaner to advance to bring up a fresh cleaning surface. Second, touch the solvent pen to the lint free wipe to make a wet spot. Third, touch the tip of the pen cleaner to the wet spot to moisten it. Fourth, use the pen to clean the endface in the normal fashion – with an extra couple of clicks to ensure all the solvent is removed and the endface is dry.

KEEPING TRACK

Once you've cleaned the endface, you're ready for the final inspection to verify that it really is clean. Don't be surprised if you end up cleaning again – that's not uncommon. Once you verify that it is clean, you're ready to plug it in and you shouldn't have to clean it again until you unplug it. Of course, that's not guaranteed because someone else with less stringent fibre maintenance habits



might tinker with it – without informing you! That's why many data centre managers keep records of every endface after inspection and cleaning. If the contamination wasn't there the last time they touched it, they'll know that someone else has contaminated the endface. ■

MARK MULLINS

Mark Mullins is one of the founding members of Fluke Networks. He has been involved in all of the key areas of the business including cable testing, network troubleshooting and analysis. As global communications manager Mullins currently oversees the company's efforts to keep customers and prospects up to date on cable testing products and technologies.

At your service

Designed with our customers in mind Mayflex offers a range of Specialist Support Services, which provide access to fully tested, readymade or ready configured and pre-assembled solutions

Mayflex uses its in-house expertise to offer a range of Specialist Support Services including:

Configured Racks

This service covers the range of Excel Environ floor and wall racks. We install most of the kit that a customer requires and deliver it pre-configured to site. Ordering pre-configured cabinets reduces installation costs and time as well as reducing equipment and specialist labour costs. Products can be configured quickly, typically in just two days.

Cabinets are covered by the 25-year Excel Networking Solutions system warranty when installed by an accredited partner.

All cabinets are configured at our recently opened Environ House facility. This state-of-the-art warehouse, assembly and office facility is located 0.5 miles from the Mayflex head office in Birmingham provides 64,500ft² of warehousing, including 4,000ft² of additional office, training and demonstration space.

Our team of expertly trained individuals construct all Environ floor and wall racks at these premises.

CLICK HERE to watch a short video about this service

Engraved Labelling Solutions

This service involves the printing of customised laser engraved adhesive labelling sheets. Labels can be ordered as sheet format, where they simply must be affixed to the equipment. Alternatively, you can choose to order the labels pre-affixed to the equipment.

Labels can be produced for cabinets, patch panels, GOP boxes and outlet modules.

CLICK HERE to watch a short video about this service

Pre-Terminated Copper and Fibre Assemblies

Several benefits can be experienced by an installation team when choosing a pre-terminated copper and/or fibre solution – these include reducing installation costs and installation times by as much as 75 per cent, as well as reducing equipment and specialist labour costs.

Our Birmingham based operation can provide items quickly – typically in three days. Each item is fully tested, fully traceable and 100 per cent inspected.

Items are also covered by the 25-year Excel system warranty when installed by

an accredited partner.

CLICK HERE to watch a short video about pre-terminated copper

CLICK HERE to watch a short video about pre-terminated fibre

Pre-Staging IP Devices

IP cameras, CCTV systems including servers, recorders, DVRs, storage units, IP access control systems, servers and network switches can all be pre-configured.

All products are set up in our headquarters in Birmingham and we can also provide engineers for the work to be carried out at your premises or on-site. Pre-staged IP devices provide you with a plug and play system and this significantly reduces commissioning time and expensive resources.

CLICK HERE to watch a short video about this service

Camera and Bracket Spraying

This bespoke camera and bracket spraying service paints a camera and its associated fittings and matches it to an exact colour requirement. This allows an establishment to provide a discreet security surveillance system enabling cameras to blend in with their surrounding environment.

CLICK HERE to watch a short video about this service

Order Online with mayflex.com

The Mayflex website has recently undergone some major developments to ensure that customers can find what they want much easier. It is also fully mobile friendly allowing for a quick and easy experience when purchasing online.

To review the full range of products available from Mayflex **CLICK HERE. CLICK HERE** to find out more about the full range of Specialist Support Services available from Mayflex.

Environ House

Rittal celebrates its 40th anniversary in Rotherham

2019 marks the 40th anniversary of Rittal in the UK. The company started its operations in Rotherham in July 1979, providing provide distribution, sales and marketing support for its customers.


Shane Hope

'Rittal UK is part of a major international success story,' said Shane Hope, managing director of Rittal. 'Our core product range of enclosures are used all over the world and are found in more than 90 per cent of all industrial sectors.'

Rittal's focus on innovation and reinvention permeates all parts of its organisation, even across longstanding and highly successful product lines. Hope concluded, 'We're helping customers to capitalise on the myriad of opportunities that are being created across the global technology sector in automation, the internet of things and cloud based computing. We'd like to thank our customers and all those who have helped us on our journey – here's to the next 40 years and beyond!'

Siemon and Arista Networks partner in Nigeria

Siemon and Arista Networks collaborated to share their expert knowledge at the recent Cloud & Infrastructure Development Forum in Lagos. It delivered insight into key technologies that can enable pan-African businesses to successfully migrate to the cloud and support a growing digital economy. The partners also demonstrated how the collaboration of complementary manufacturers to deliver a turnkey solution for cloud deployments can add true value to customers.


James Kiriamiti

The forum was aimed at data centre/colocation carriers, telecommunications, financial and educational institutions, and installers, as well as public sector and government organisations which especially benefited from understanding how to leverage software driven, cognitive cloud networking solutions and deploy the right passive infrastructure products for a robust, future proof deployment.

In Nigeria, where the population stands at close to 200 million, consumption of data and other cloud-based business applications continues to rise now and in the foreseeable future. 'For businesses, this means robust infrastructures must be put in place to support this growth. For managed service providers and data centre operators, it is important to understand which solutions will best serve their purpose and give them the competitive edge,' said James Kiriamiti, Siemon's marketing and partner manager for Europe, Russia and Africa.

Mayflex joins forces with Xanview

Mayflex has formed a distribution agreement with Xanview, which offers hybrid cloud based video surveillance technology that has been extensively adopted by retailers, restaurants, hotel chains, housing associations, offices, healthcare and the police.

Steve Proctor, director of sales security at Mayflex, commented, 'Xanview is a great addition to the Mayflex security product portfolio. It will not only provide our installation partners with access to an exciting new product line but will also create opportunities for them to generate recurring revenue streams.'

Regina Shmerlin, CCO of Xanview, added, 'We are delighted to be partnering with Mayflex and we look forward to rolling out our security solutions to more customers across the UK. As a leading electronic security solutions provider with an extensive network of installers, Mayflex is an ideal distribution partner for us.'

Excel leads the way by going plastic free

Excel Networking Solutions is making significant changes to the packaging of its copper and fibre optic components – a move which it estimates will save over 40 tonnes (40,000kg) of single use plastic each year.

Excel asked customers for their thoughts on its product packaging. A substantial proportion of customers (92 per cent) indicated that if products were available in multi-unit packs rather than single units, that would be a preferable purchasing option. In addition to this, almost 40 per cent of respondents said that their customers were requesting reductions in single-use plastic packaging materials as part of the tender selection processes.

Jason Rudge, commercial procurement director at Excel, commented, 'It hasn't been an easy change but one that we've persevered with to develop alternative plastic free packaging for much of our copper and fibre product lines, as well as reducing cardboard box sizes where we can. We are committed to listening to our customers and end users to find solutions with our suppliers that work for them. This latest drive to remove single-use plastic bags from a range of Excel products is the latest example of our efforts to improve our sustainability – but it is by no means the end of the road.'

Rahi chooses CNet Training to provide programs to customers and partners

CNet Training has partnered with Rahi Systems to deliver a three day Certified Data Center Design (CDCD) program to select customers and vendors. Rahi is organising eight sessions with CNet Training throughout 2019 at locations in the US, Europe and Asia.

The program is a three day session designed for individuals who are involved in the day-to-day management of existing data centre facilities, or who are seeking to better understand best practices in the design of new facilities. Participants who successfully complete the program gain official certification, an internationally recognised qualification and may use the CDCD designation in their professional titles.

Andrew Stevens, president and CEO at CNet Training, said, 'We are delighted to be providing the CDCD technical education program to Rahi Systems and its partners. It's great to see companies realising the importance of continued professional development. This will, in turn, will improve quality of service and competitive advantage.'

Bill Muczko, executive vice president of sales at Rahi Systems, added, 'Many of our customers are looking to optimise their data centres to improve energy efficiency and meet today's business demands. CNet Training's program directly addresses these requirements in terms of electrical distribution, cooling, cabling and other elements of the physical infrastructure.'

Sudlows achieves fourth RoSPA Gold Award for its health and safety practices

Sudlows has, once again, been handed the prestigious RoSPA Gold award in recognition of its health and safety practices and achievements. This is the fourth year in a row that Sudlows has achieved a Gold in the internationally renowned RoSPA Health and Safety Awards, the longest running industry awards scheme in the UK.

The RoSPA Awards scheme, which receives entries from organisations around the world, recognises achievement in health and safety management systems including practices such as leadership and workforce involvement.

Chris Dummett, commercial director for Sudlows, said, 'We are delighted to have achieved the RoSPA Gold level award for what is now the fourth consecutive time. Health and safety is clearly one of the most important and fundamental parts of our business and we are constantly working to ensure the safety and welfare of all our clients and colleagues.'

CHANNEL UPDATE IN BRIEF

Panduit EMEA has achieved approved supplier status to the Kao Data Campus for its Universal Containment, hot aisle containment enclosure and rack systems.

Verne Global has joined the NVIDIA DGX-Ready Data Center Program as a certified colocation partner.

As the company celebrates its 50th anniversary, Huber+Suhner has received Raytheon's Supplier Excellence Award.

Harting has received the coveted German Innovation Award 2019 for its ix Industrial range.

Exponential-e has been recognised by Zerto as its EMEA Cloud Service Provider of the year for 2019.

AllCloud has expanded its sales and technical service operations in Berlin. The expansion continues AllCloud's momentum in Germany and Europe, where the company has been growing rapidly.

Keeping it up

Karl Lycett of Rittal explains why effective climate control is necessary for optimal equipment operation and uptime

Whenever I hear IT professionals talking shop, the word uptime is liberally sprinkled into the conversation. Quite simply, a key measure of the success of operations in this space is service availability. Climate control is a powerful weapon in the battle in achieving uptime but, to employ it effectively, there must be an understanding of the impact of poor control, as well as detailed knowledge of all the options and the availability of new technology.

THE HEAT IS ON

The IT industry is clearly responding rapidly to consumer demands – manufacturers are increasing performance capabilities with each passing year, while also reducing footprint. This means that the heat density within a rack increases with each new generation of equipment. If you fail to combat the predicted increase in heat load after an upgrade, you risk causing significant harm to your IT systems through:

• Reduced operating life

IT equipment is extremely sensitive and has to be kept in a strict temperature range to perform to full potential. Straying from these limits means equipment will be in an environment it was not designed for, which will shorten its lifespan. Any reduction in the lifespan of equipment will increase costs. It will age quicker and need to be replaced at a faster rate. This reduces available spend in other areas – potentially causing a wider impact on the business.

• Reduced performance and reliability

Equipment which is exposed to higher temperatures will protect itself by reducing output – even shutting down completely if a high enough threshold is met. Any mission critical equipment that ceases to operate can wreak havoc on a business. The loss of an email system or a production line error is going to be expensive to correct and carries the risk of reputation damage if customers do not receive goods or services.

• Increased energy costs

If you've added new drives, your existing cooling equipment may still cope with the demand – but only just. It will have to work hard to maintain the status quo, which will lead to a spike in your energy consumption and a reduction in the lifetime of your cooling system!

MAKING A DIFFERENCE

Even if your existing climate control is suited to your equipment, there are still small improvements you can make to increase the efficiency of your cooling and save money.

Any unoccupied rack space may mean the resulting spare U is left vacant. This then allows hot air to short circuit the correct route and leak into the cold area of the rack which in turn affects the overall efficiency of the cooling equipment as the dreaded 'ΔT' is reduced along with the overall cooling performance. A simple remedy is the use of blanking strips, which fill up the spare

'Climate control is a powerful weapon in the battle in achieving uptime but, to employ it effectively, there must be an understanding of the impact of poor control.'

U and ensure separation.

The same principle applies anywhere that cables enter the rack and in the space either side of the 19 inch angles. These points allow both hot and cold air to mix and permits ambient air into the rack. The application of brush strips to the roof and base plate allows the installation of new cabling, while still ensuring an effective seal. Foam strips that can be modified to suit a gap, will provide a solid barrier to either side of the angles and prevent an air short circuit.

Likewise, if perforated doors are being used, installation of aisle containment should be high on the priority list. This is a system of door and wall pieces which create a barrier between the warm air and the cool air. A cold aisle creates a pocket of cold air that can be utilised by all racks in the vicinity, and the hot aisle is the opposite in which the hot air from numerous racks is in one zone. This system is practical, it is modular and suits existing installs. It can increase performance and reduce energy consumption of existing cooling equipment, which may prevent the need for an upgrade, saving money.

THINGS TO CONSIDER

Here are some key considerations:

• Types of cooling

There are many types of systems, each suited to different applications. If the heat load is small, fans can draw air through the rack and perform the cooling. As heat density increases, there is need for mechanical cooling, which utilises either a direct expansion (DX) circuit or a cold water (CW) product connected to a chiller. Both are known as split systems.

They have their product in the white space, delivering cold air but employ a condenser for DX or chiller for CW. This approach has limitations dependant on manufacturer, as there are maximum distances that have to be adhered to prevent any issues with pressure etc. The installation will require holes being drilled for pipework and electrical supplies for both parts of the system.

• Future expansion

Installing a cooling unit, which is only slightly larger than a load means facing more costs when new servers are

installed and their density increases. Some manufacturers offer scalable products via the addition of extra fans, which allow you to increase the output as needed to ensure that same temperature range is maintained.

The same point rings true if you specify a chiller and leave insufficient room for growth. Then you will have two options – either replace the chiller with a larger one or ensure the chiller can master/slave with other chillers, allowing you to purchase another small chiller to work in tandem.

• Redundancy

You should also plan for any scenario where your climate control shuts down, and the way to do this is by building in redundancy. Quite simply, add more units than you need to protect your equipment so that when a product breaks down or requires maintenance, the heat load can be managed through alternative systems.

THE NEXT LEVEL

Optimal operation is not just about the right cooling – there is a range of additions which can take the functionality of your IT equipment to the next level.

Data centre infrastructure management (DCIM) software is offered by many manufacturers and allows the user to visualise their white space and equipment. If DCIM is used in tandem with connected climate control or power it gives remote access for the IT manager to live temperatures, energy usage and other variables. If anything changes, DCIM will issue an alert so the problem can be resolved before it causes any harm to equipment.

If there are multiple users – for example, if other businesses rent your rack space – it can create security concerns. Nobody wants an unauthorised person pulling out wires so it's worth investing in DCIM in conjunction with lockable racks to prevent unauthorised entry and alert staff to any issue before equipment is compromised.

FORWARD THINKING

All too often I see the results of poor initial planning and a lack of understanding of the need to future proof installations from the get-go. Taking heed of the above can prevent higher costs and further disruptions for your business down the line. ■

KARL LYCETT

Karl Lycett began his career as a mechanical design engineer before moving into product management while working for Eaton. He joined Rittal as climate control product manager in 2017 and focuses on both the industrial and IT markets. His main focus is to support the UK customer base by providing expert advice and sales support on Rittal's range of innovative solutions.

Stulz

Stulz's new EC Tower is designed for rapid deployment and requires a third of the footprint of some conventional precision air-conditioning units. Temperature management for IT infrastructure is critical, even for smaller server and technical rooms, and precision air-conditioning is vital. To meet this demand, a new split air-conditioning system – the EC Tower – has been launched by Stulz UK, offering high levels of reliability and precision control, in a fraction of the footprint of conventional air-conditioning systems.

'All too often, poorly specified cooling technology leads to erratic climate control, increased operating expenditure and costly disruption to IT operations. Downtime is not an option regardless of the size of the server room. However, precision cooling solutions, such as the EC Tower series, are ideally suited to technical spaces that cannot compromise on reliability, space or cost,' commented Phil McEneaney, head of sales at Stulz UK.

For more information **CLICK HERE** or to send an email to the sales department **CLICK HERE.**

www.stulz.co.uk

Mayflex

The first step in cooling and climate management within any environment is the ability to measure activity. Being able to determine the temperature that is being generated by the deployment of equipment and to understand where there are temperature issues. Only with this information can an effective and efficient cooling solution be implemented.

It is important to monitor more than just the heat of a room – facilities need to look at consumption of things such as CO2.

The Excel IPLite range of power distribution units (PDUs) is designed and manufactured in the UK to provide a cost effective local and remote power monitoring solution. Four options are available in both vertical mounting and 19-inch horizontal mounting variants.

Measurement accuracy is of billing quality. Every unit features a range of ports providing flexible connectivity, which include a humidity sensor port and temperature sensor port allowing up to eight sensors.

Key features include:

- Overall energy measurement including Kg/CO2 and kWh
- Monitoring of multiple PDUs on a single IP address
- Easy to configure.

To find out more **CLICK HERE.**

www.mayflex.com

EDP Europe

Hot or cold aisle containment (HAC/CAC), as part of an airflow and thermal management strategy, improves cooling optimisation and thermal performance, contributing to energy efficiency gains at the computer room air conditioning (CRAC) unit level. EDP Europe's hot and cold aisle containment solutions are fully flexible, customisable, cost effective and can be deployed in new build data centre construction projects or retrofitted within existing/legacy environments.

Bespoke design and engineering capability enables EDP Europe to deliver aisle containment solutions that are tailored to a customer's specific requirements and are independent of cabinet manufacturer.

EDP Europe aisle containment can be designed to suit any configuration of racks (widths, heights), any aisle width, to work around structural obstacles or aisles that are offset or have empty rack positions, and can accommodate all overhead services such as cable trays, busbar and fibre raceway.

EDP Europe's comprehensive containment offering includes double or single clear path soft closing sliding doors, swing doors, fixed, passive and active roof systems and LED lighting options.

CLICK HERE to find out more, call our sales team on 01376 501337 or **CLICK HERE** to send us an email.
www.edpeurope.com

Comtec

Deploying active IT equipment can be challenging and detrimental to working conditions, in terms of constant evasive noise and excessive heat generated.

Available from Comtec, the USystems UCoustic 9210i active range of premium quiet rack enclosures provides the ultimate combination of noise reduction and air cooled thermal performance. A viable alternative to a costly dedicated comms room, it allows the deployment of servers and network equipment directly in the office environment, reducing noise up to 31dB(A) and removing up to 12kW of heat load in a 42U cabinet.

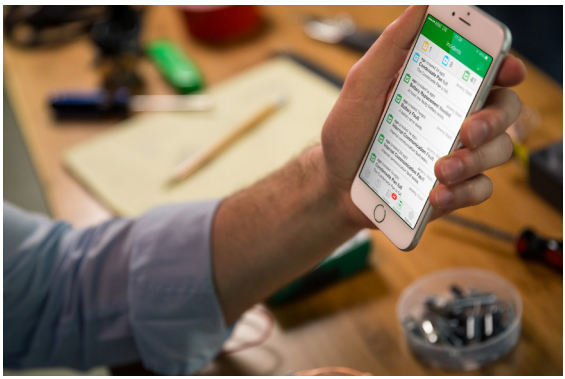
The UTelligent Management System (UMS) is included as standard and provides remote monitoring, device and sensor management – displayed on the free integral web user interface (WebUI).

To find out more call Comtec on 01480 415000 or **CLICK HERE** to visit our website.

www.comtecdirect.co.uk

Schneider Electric

Schneider Electric's EcoStruxure IT Expert is a cloud based data centre infrastructure management (DCIM) solution that brings secure, vendor agnostic monitoring and visibility of all internet of things (IoT) enabled physical infrastructure assets.



IT Expert operates with all IoT enabled physical infrastructure assets like secure power and cooling – including the cloud enabled Smart-UPS with APC SmartConnect. It addresses the need to simplify how data centres, distributed IT, and local edge environments are managed. Providing proactive recommendations and consolidated performance and alarming data, IT Expert can significantly reduce alarm noise and improve overall site resiliency.

To find out more **CLICK HERE.**

www.schneider-electric.co.uk

Austin Hughes

Austin Hughes' InfraCool solutions help minimise hotspots in server racks, assist with aisle containment cooling performance and provide overall temperature monitoring.

Austin Hughes also offers a full rack environmental management solution with InfraGuard, a variety of sensors, plus optional integration of devices such as InfraPower PDUs and InfraCool Fan Units:

- 1U 19-inch Rackmount Fan Trays. Basic or intelligent models, these fan units can exhaust hot air out of the top of rack or intake bottom cool air into the rack. They are designed to suit third party racks.
- Rack Door Mounted Fan Panels. Installed on the outside of a rack's rear perforated door to improve heat extraction from a high density rack. The unit can be attached to most 42U or taller rack models.
- Raised Floor Mount Fan Unit. Delivering strong cool air from underfloor via the contained aisle to the high density server racks to eliminate inside hotspots. Maximises CRAC efficiency and saves energy cost.

CLICK HERE for further information.
www.austin-hughes.eu

Don't sweat it

One of the most important areas in operating a data centre is how to cool it effectively and, as it's also one of the most expensive tasks, efficiently. Colin Parker of EDP Europe explains how to go about it

Ensuring you have an effective cooling and climate management program in place not only delivers a data centre that is airflow optimised, which is beneficial to the IT equipment, but can also allow changes to be made at computer room air conditioning (CRAC) level that helps enable energy cost savings to be made, so reducing overheads.

BIG ISSUES

Many data centres are overcooled due to poor design, poor room layout and/or poor airflow management. As a result, it can lead to a number of issues including bypass airflow, latent cooling, short cycling and hotspots.

Bypass airflow is any conditioned air that fails to pass through the IT equipment that it is supposed to be cooling. Misplaced floor grilles and unsealed gaps in raised floors or unused rack space are good examples of this. Latent cooling is caused by hot exhaust air mixing with cold conditioned air on its return to the CRAC units, which can reduce the cooling capacity and lower the humidity within the data centre.

Furthermore, short cycling is another form of bypass airflow that results from floor grilles failing to deliver cold air at the intended location. It occurs where the speed of the cold air moving beneath the grille produces negative pressure that hinders the air flowing out the tile. Hotspots result in areas of racks where insufficient conditioned air is supplied to cool the equipment –often found in the top third of a rack.

WHAT CAN BE DONE?

Having an effective airflow management strategy in place can reduce or eradicate these issues. Ideally, it should start with ensuring that the room layout is in the cold aisle/hot aisle formation, where the front of the racks containing the equipment air intakes form the cold aisle, and the rear of the racks venting hot exhaust air form the hot aisles.

In raised floor environments the placement of floor grilles, which provide the conditioned cold

air to cool the equipment, should only be in the cold aisle. Any grilles placed in hot aisles should be removed and replaced with solid tiles. Floor grille design can also have an effect on their cooling efficiency and some have a specially designed fin than disrupts the airflow within the plenum, resulting in better airflow through the grille. This leads to better stratification, allowing the conditioned air to reach IT equipment mounted higher in the rack.

On the subject of the plenum, obstructions under the floor such as pipework and cabling often restrict airflow. Underfloor air barriers can be used to create corridors under the cold aisles so that the cold air is directed to only the areas where it is most needed.

MIND THE GAPS

As well as ensuring floor grilles are positioned correctly, it is also vital that any other openings within the raised floor, for example, where pipes or cables come through, are sealed using brushed raised floor grommets or floor air barrier foam. Doing so reduces bypass airflow and helps recover previously lost cooling capacity, as well as increasing the static pressure under the floor.

There are also some important areas to address at rack level too. It is vital to prevent the mixing of hot air from the rear of the rack and allowing it to migrate to the front of the rack where it can affect the cold air cooling the equipment. This can occur in various places at rack level. To start with any unused rack space should be blanked off using blanking panels. Next, any other gaps within or around the racks should also be sealed. Gaps within the rack can occur between the mounting frame and the top, bottom or sides of the rack. Sealing them can be achieved using rack air barrier foam or specially designed rack airflow management kits.

Outside of the rack there can be gaps below the rack if it is mounted on castors or levelling feet. These can be sealed using under rack gap panels or air barrier foam. Finally, there can be gaps

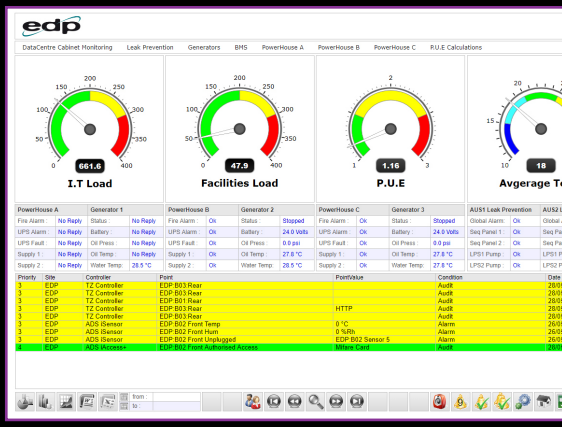
between racks caused by missing cabinets or obstructions such as building support columns. Adjustable rack gap panels can be fixed to the side of one cabinet and a pull out panel that fixes to the nearest adjoining cabinet using magnets seals the gap, or alternatively replacement rack panels can be installed and then removed when a cabinet is returned.

PROS AND CONS

At row level the implementation of an aisle containment system, be it fully enclosed or via a partial modular containment system, can be used to enclose the cold aisle (cold aisle containment) or the hot aisle (hot aisle containment). The end result on either version produces similar results – the prevention of the cold air and hot air from mixing. Both systems have their pros and cons so choosing which system is best to use will depend on individual site requirements.

> 'Many data centres are overcooled due to poor design, poor room layout and/or poor airflow management. As a result, it can lead to a number of issues including bypass airflow, latent cooling, short cycling and hotspots.'

Making these adjustments then enables changes at room level which can lead to energy cost savings. Every degree centigrade that a CRAC unit setpoint can be raised can lead to up to an eight per cent energy cost saving.



MONITOR AND MANAGE

Environmental monitoring also plays a vital role in effective climate management,

helping to detect and alert data centre managers to potential problems or areas requiring attention.

Environmental monitoring systems usually start with monitoring two key parameters – temperature and humidity. Temperature monitoring helps identify areas which maybe being overcooled or at risk from suffering from hotspots. Likewise, with humidity monitoring, the monitoring system can detect if the humidity level is too low, putting IT equipment at risk of electrostatic discharge or, if too high, excessive moisture. User defined thresholds can be set to predetermine when low and high alerts are sent, enabling data centre managers to react proactively before more serious problems arise.

CENTRE OF ATTENTION

Managing environmental data, along with power data from intelligent PDUs can be made easier through the implementation of a data centre infrastructure management (DCIM) system.

Using the data sent from 'intelligent' equipment via SNMP, a DCIM system can help enable data centre managers to make informed decisions about their data centre estate and to aid them in making capacity planning decisions to support immediate and future IT installations. Using data from temperature and humidity sensors, along with data from PDUs – particularly if the PDU is providing socket level data and combining it with information from the DCIM's asset register – will enable data centre managers to perform regression analysis and allow meaningful capacity forecasting based on live data, helping to eliminate potential issues before new equipment is installed.

HOLISTIC THINKING

By combining the best practices of airflow management with the latest intelligent based monitoring devices, it is possible to improve data centre cooling, gain energy cost savings through raised setpoints, protect against potential issues caused through temperature or humidity changes and plan for future demands giving you complete control over your climate management. ■

COLIN PARKER

Colin Parker is the marketing manager for EDP Europe and has been with the company for 21 years. As an experienced and creative marketing professional, he has helped establish EDP Europe as a leading supplier of infrastructure solutions for the data centre environment, providing a broad portfolio of leading edge systems to optimise performance, efficiency, resiliency, flexibility and security of its customers' data centres.

Cambium Networks keeps world's largest military air show connected

Cambium Networks was recently selected to provide Wi-Fi connectivity to both organisers and thousands of spectators at the world's largest military air show – The Royal International Air Tattoo (RIAT) at RAF Fairford in Gloucestershire.

To deliver the most comprehensive Wi-Fi in the history of the event, Cambium Networks provided more than 100 of its outdoor and indoor access points across 35 site-wide locations. Cambium Networks' cnMaestro also provided end-to-end network control, which enabled seamless device management of Cambium Networks' cnPilot E501S Enterprise Outdoor and cnPilot e500 Enterprise Outdoor access points, which were placed around the showground to provide end-to-end Wi-Fi connectivity in public areas as well as on the runways, where coverage is usually unavailable due to the inability to lay fibre.

Due to the no single point of failure design of the network, which can overcome interference challenges, thousands of spectators were able to simultaneously use the service at any one time without disruption, enabling them to download, upload and stream content live from the air show.

Cleone Foods improves communications with new networking hardware

Cleone Foods is a leading UK producer and distributor of Jamaican patties to major supermarkets. The food manufacturer, based in Birmingham, needed a Wi-Fi-based phone system to streamline factory floor communications across 1,400ft² and a network that could appropriately support it without dropping calls.

Due to the harsh environment of a food manufacturing warehouse, wires cannot be exposed, and all hardware used to support the infrastructure must be able to withstand heavy duty cleaning, as well as extreme high and low temperatures, without impacting networking strength.

With a new suite of Zyxel's access points, switches and controllers that provide wall to wall coverage for the handsets, Cleone Foods now enjoys a secure and stable network, reaching dead spots. It has also more than halved handset replacement costs, while improving communications across the warehouse to encourage greater efficiency and productivity of staff, who previously had to work around communications dead spots.

PROJECTS & CONTRACTS IN BRIEF

Colt Data Centre Services (DCS) has expanded its presence in Germany with its new Frankfurt West data centre. The strategic decision to expand comes alongside demand in the region from cloud service providers, but also complements the company's investment drive into new and existing markets, which recently included Tokyo and Mumbai.

Aspect Software to has implemented a dedicated, cloud-based customer engagement platform for William Hill.

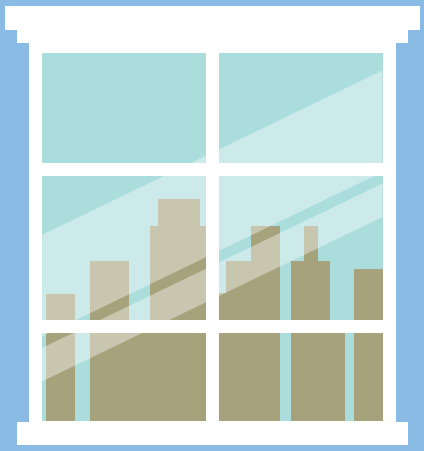
Equinix has announced an expanded collaboration with IBM Cloud to bring private and scalable connectivity to global enterprises at the digital edge via Equinix Cloud Exchange Fabric.

The University of Pittsburgh's Petersen Events Center has chosen Extreme Networks to deliver a professional grade, high density Wi-Fi network capable of simultaneously supporting venue operations and the digital appetite of 13,000 attendees.

Rubrik has been selected by Coventry University to protect its user and research data across Nutanix, Microsoft and AWS environments.

Quick clicks

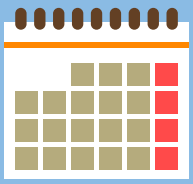
Your one click guide to the very best industry events, webinars, electronic literature, white papers, blogs and videos



Networks Centre has produced a UPS Jargon Buster.
CLICK HERE to read it.

Disruption in the C-Suite: How the Digital Transformation Imperative is Changing CxO Dynamics and Technology Strategy is a report by **Financial Times (FT) Focus and Apptio.**
CLICK HERE to download a copy.

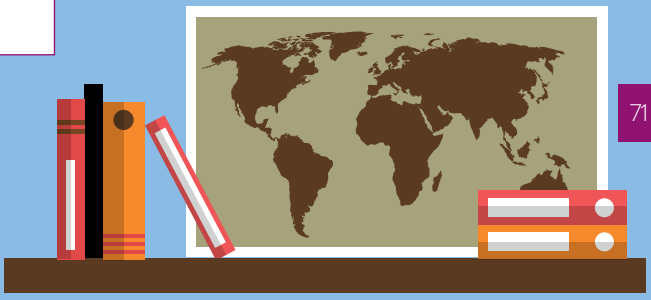
10 Steps to Smart Building Success – Part 1: People Power is a blog from Matt Salter of **ExcelRedstone.**
CLICK HERE to read it.



FOR A FREE SUBSCRIPTION TO **Inside_Networks** CLICK HERE

Axis Communications has produced a new white paper titled Smart Buildings & Smart Cities Security. It provides a detailed study of benefits and challenges for smart buildings and city management and highlights methodology to effectively address associated security risks **CLICK HERE** to obtain a copy.

Is PUE Actually Going Up? is the question posed in a blog by Andy Lawrence of the **Uptime Institute.** **CLICK HERE** to find the answer.



ACCL has put together answers to a list of 101 frequently asked questions about access control. **CLICK HERE** to read it.

The Power of Good is a blog by Guillaume Angeli of **Nexans,** which looks at why fibre to the office (FTTO) offers a sustainable alternative to traditional network infrastructures. **CLICK HERE** to read it.

Ideal Networks

Ideal Networks' LanTEK IV is a copper and optical fibre cable certifier that provides faster test times. It can conduct and save a Category 6A test within seven seconds, assisted by the intuitive user interface and easy to use high resolution touchscreen. In addition, the tester's enhanced functionality certifies links up to Category 8 and will sweep to 3000MHz, providing room for future ratified ISO and TIA test standards.

LanTEK IV's patent pending VisiLINQ permanent link adaptor allows users to initiate testing and view the results without even needing to hold the certifier, allowing technicians to work smarter – saving time and increasing productivity. The LanTEK IV cable certifier can also connect to Wi-Fi and to the new Ideal AnyWARE cloud test management system to enable real time collaboration.

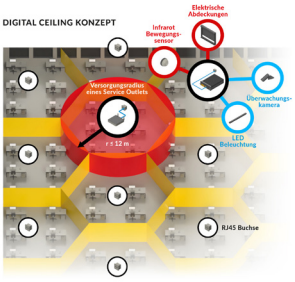
LanTEK IV is available to purchase directly from Ideal Networks online, or via a worldwide network of trusted distributors. For companies that require three or more certifiers, Ideal Networks offers a Test4Less option which enables them to acquire LanTEK IV via its Pay As You Test scheme.

CLICK HERE to watch the launch video or for more information **CLICK HERE.**

www.idealnetworks.net

R&M

R&M is offering the real estate world an all in one package for networking smart buildings, uniting the cabling for LAN, the Ethernet or internet protocol (Ethernet/IP) with related technologies. This includes wireless LAN (WLAN), power over Ethernet (PoE) and Single Pair Ethernet (SPE). This symbiosis makes it possible to control digital building automation exclusively over IP.



The standard separation of IT and field bus components is now replaced by uniform, application neutral and manufacturer independent connectivity. The whole building speaks a single language, which simplifies installation and maintenance. As such, material and operating expenses decrease.

A plug and play approach makes addition of network switches, sensors, controls, WLAN access points and other distributed building services fast and easy. The R&M package also supports PoE, the Digital Ceiling concept and passive optical LAN (POL). Fibre optic cabling for extended systems such as airports, malls, resorts, and hotels delivers virtually unlimited bandwidth for miles.

To find out more **CLICK HERE.**

rdm.com

Chatsworth Products (CPI)

Balancing limited space and rising rack densities are growing concerns for data centre and facility managers – especially as the demand for more power and network speed continues to increase. The best way to address these challenges in today's data centres is to deploy reliable and efficient power products that will ensure confidence and uptime for your critical applications.

CPI's extensive line of power management products deliver safe and efficient power to your systems. Ranging from the intelligent monitoring and switching capabilities of the eConnect line of power distribution units (PDUs), to basic power strips and in-line meters, CPI's power management products are specifically designed with your flexibility and scalability needs in mind.

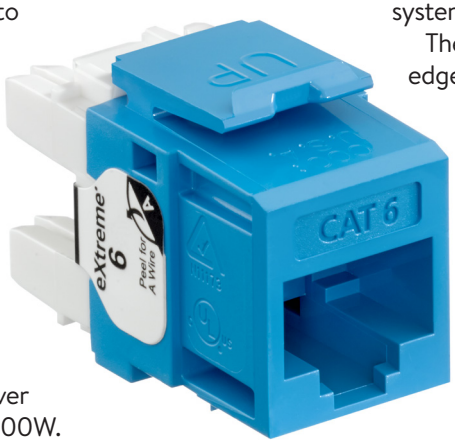
For convenience and quick installation, these efficient and effective CPI power management solutions can be pre-installed into your choice of cabinet, so when it is delivered, it is ready to go.

To plan your power management efforts with reliability and efficiency in mind **CLICK HERE** to use our online power selector!

www.chatsworth.com

Leviton

Leviton eXtreme jacks pair high quality, guaranteed performance with a user friendly design to support fast and easy installation. The category rated UTP jacks have unmatched system longevity and are well suited for an extensive range of enterprise and commercial networks. Plus, they support power over Ethernet (PoE) up to 100W.



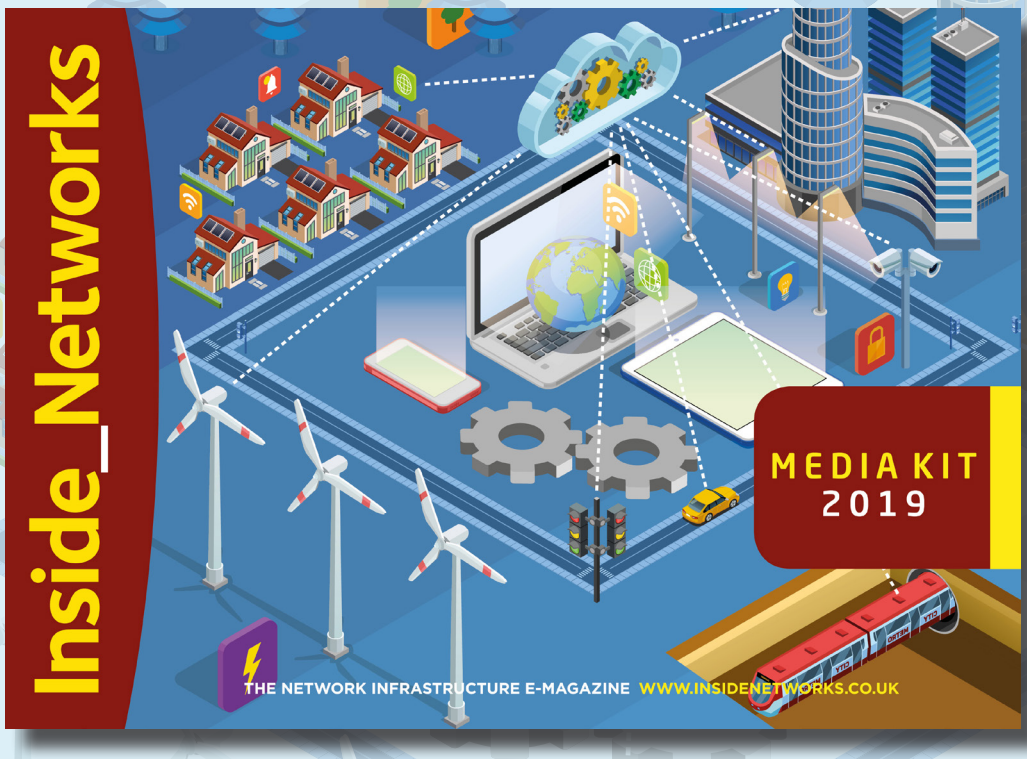
The jacks are compatible with the Fluke JackRapid Punchdown Tool for quick and easy terminations. Patented Retention Force Technology (RFT) protects the jacks against tine damage and increases system longevity.

The innovative cutting edge and pair separation towers simplify punchdown, reduce rework, and support faster terminations. Patented tearaway dual layer T568A/B labels make for faster and easier field terminations. Additionally, the jacks come in 13 colours for simple tracking.

CLICK HERE to learn more.

www.leviton.com

All you need to know



CLICK ON THE COVER TO VIEW THE 2019 MEDIA KIT

Driving force

Ian Hume of Lenovo looks at how a connected world is being cultivated through emerging technology

December 2018 marked a major milestone – for the first time, more than half of the world's population was connected to the internet, according to data from the International Telecommunication Union. But while we're getting there with connecting the world, a gap between the technology we have and our ability to use it to its fullest means we're still struggling to realise our true digital potential.

TREND SETTING

An August 2018 study by Currys PC World found that 42 per cent of the public believe technology is too complicated, despite 80 per cent using a smartphone and two-thirds using a laptop on a daily basis. Furthermore, one quarter of the 2,000 respondents admitted they were 'clueless' about the cloud and didn't know how cloud storage works. The situation is little different in business.

'Adopting the latest trends, innovations and software releases is all well and good, but doing so without getting the most out of what we already have can hold businesses back.'

Adopting the latest trends, innovations and software releases is all well and good, but doing so without getting the most out of what we already have can hold businesses back. It's therefore essential that we gain the maximum benefit of the technology we currently have at our fingertips.

FOCUS GROUP

An IDC report recently revealed that the amount of data in existence will grow to 175ZB in 2025, a 430 per cent increase on the 33ZB in existence in 2018. And 90 per cent of that data is expected to be created by the internet of things (IoT) alone. While data is increasing exponentially, businesses remain unable to capture data effectively and put it to use in a way that delivers value.

This is indicative of the digital gaps that are permeating the business world. For instance, public services like tax payments, utility bills and health information could be made more accessible and user friendly if government data was made more publicly available. Meanwhile, small businesses could gain a huge competitive advantage on their larger, less agile competitors if they were to fully capitalise on the opportunities of cloud computing.

DECISION TIME

Businesses won't be able to make real time decisions with human brain power. There is simply too much data, coming too quickly. The true power of IoT is impossible without artificial intelligence (AI) at the edge. In some cases, waiting for a human to intervene just slows down the process.

When a water sensor in a culvert detects conditions that indicate the possibility of flood, it will just communicate with a valve to open and provide a safe path for the extra water. When another sensor realises that a keg is getting low at the bar in a football stadium, it will flip over to a full keg before the beer line gets too long and customers get agitated.

We also see in other cases – humans actually acting on AI results. Modern smart city video security and surveillance solutions can detect a hit and run crash and then track that vehicle's number plate across thousands of feeds of video and

notify operators and police where the vehicle is at in real time. The AI system's capabilities are far superior to a human watching the same feed, and enables people to make better decisions and take quicker action.

With AI and machine learning technology becoming mainstream, a number of industries are already seeing big benefits. Agriculture, science and healthcare are among the multitude of industries using the technology to provide better quality services and products. From improving drought management to enhancing radiology practices, AI is the driver in optimising these solutions.

DIGITAL POTENTIAL

Closing digital gaps in the business world won't suddenly be achieved through a 'big bang' moment. Rather, it will be a gradual process of intelligent transformation, which will see businesses digitising their assets driven by big data and the cloud, as well as emerging technologies like blockchain, edge computing, 5G and AI.

These technologies are increasingly shaking up businesses, changing the way they operate, reshaping their processes and rewriting business models as we know them. For example, the combination of 5G and edge computing will eliminate the need for businesses to have a server on premise, enhancing their data processing capabilities and guaranteeing low latency and high bandwidth. To put it into context how businesses will change the management of their data, around one-tenth of enterprise generated data is currently created and processed outside of a traditional data centre but by 2022, Gartner predicts that will rise to 75 per cent.

CASE IN POINT

We're seeing businesses all over the world begin to get the most out of their existing tools and systems by embracing emerging technologies. For example, the deployment of an edge computing infrastructure has had a major impact in enhancing security systems across Bogota in Colombia.

The solution by Pivot3 has revamped the city's complex monitoring system of more than 1,000 cameras from different vendors, enabling its security team to view any camera, regardless of brand, from a single location, which hugely simplifies operations. This has maximised the performance of an array of sensors already in place, while allowing the city to expand its security systems with an additional 2,000 cameras.

Another instance of a business that has used technology to address the digital gap is Chilean berry producer and distributor, Hortifruit. Uncontrollable variables have historically hampered farmers with crop sizes varying wildly from year to year, which, of course, can impact revenue.

Hortifruit has addressed this issue by gaining real time insights into weather and location issues, which help optimise production and ensure a reliable stream of ripe berries. Deploying an SAP HANA platform also helps Hortifruit get the best out of its existing technology by making all

data available in one place. This means it can easily identify the most productive berry growing locations and enhance productivity across its production region – guaranteeing optimal berry supply and revenue.

MIND THE GAP

Smart technology solutions can be the catalyst required to begin closing the digital gap for people and businesses, helping to ensure we cultivate a better connected world along with a more collaborative technology ecosystem. By partnering with software agnostic businesses people and organisations can access the information and services they need to use their technology to its fullest, whenever and wherever they need them. ■

IAN HUME

Ian Hume is UK&I general manager at Lenovo and has significant experience in the technology market having worked at both Dell and Xerox. He has specialised in delivering sales, channel and distribution growth across multiple regions, ensuring growth through transformational technologies, and supporting mutual success for both the vendor and channel.

08:25

WE HOPE YOU HAVE ENJOYED

Inside_Networks

COMING UP IN OCTOBER 19'S ISSUE:

SPECIAL FEATURES:
> ENCLOSURES, RACKS AND CABINETS
> CONVERGED NETWORK INFRASTRUCTURES

TO FIND OUT MORE ABOUT PROMOTION WITHIN THESE FEATURES CLICK HERE

- ALL THE LATEST NEWS, VIEWS, COMMENT AND ANALYSIS
- WHAT CAN BE DONE TO ELIMINATE HUMAN ERROR IN THE DATA CENTRE?
- ALL YOU NEED TO KNOW ABOUT THE NEW NETWORK CABLE INSTALLER (NCI) APPRENTICESHIP
- COULD 5G MAKE WI-FI OBSOLETE?
- CONVERGED NETWORK INFRASTRUCTURES WITHIN DATA CENTRES
- ACHIEVING SUCCESSFUL DIGITAL TRANSFORMATION
- MOVES, ADDS AND CHANGES IN THE CHANNEL
- NETWORK INFRASTRUCTURE CASE STUDIES FROM AROUND THE WORLD
- THE LATEST PRODUCT, SYSTEM AND SERVICE DEVELOPMENTS