

THE NETWORK INFRASTRUCTURE E-M

# Inside\_Networks

## Joined up thinking

THE LATEST DEVELOPMENTS  
IN OPTICAL FIBRE AND  
COPPER CONNECTIVITY

## The shape of things to come

2021 REVIEWED  
AND 2022  
PREVIEWED

## Attention to detail

HOW TO PLAN FOR  
EFFECTIVE CABLE  
MANAGEMENT

P  
S



# The Ultimate in Copper Infrastructure

In an ever-changing network landscape, you need solutions designed to keep pace with your business needs. At Siemon, **Innovation is in our DNA**, and we've shaped our years of experience into an industry-leading range of shielded and unshielded copper solutions designed to support you, no matter the application.

## What makes a great copper solution?

Z-MAX®



### FAST TERMINATIONS

Quick and reliable terminations every time.

Z-PLUG™



### FIELD TERMINATIONS

Dependable terminations anywhere.

Z-MAX® 45



### 45-DEGREE TERMINATIONS

Support for the most challenging spaces.

Explore our Copper Solutions

6

**ROB'S BLOG**

Here we go again...

9

**NEWS**

All that's happening in the world of enterprise and data centre network infrastructures



32

**CHANNEL UPDATE**

Moves, adds and changes in the channel



34

**CABLE MANAGEMENT AND LABELLING**

Cindy Ryborz of Corning Optical Communications explains how to plan for effective cable management

14

**MAILBOX**

The pick of the recent emails to Inside\_Networks



38

**CABLE MANAGEMENT AND LABELLING SOLUTIONS**

State-of-the-art cable management and labelling solutions profiled

17

**QUESTION TIME**

Industry experts review the events of the last 12 months and suggest what 2022 might have in store



42

**CABLE MANAGEMENT AND LABELLING**

Joseph Bowden of Brady Corporation and Ian Bankhurst of CMW explain how labels can help avoid downtime and create efficient physical asset visibility



54

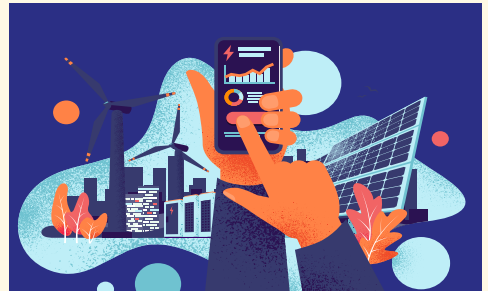
**CONNECTORS AND CONNECTIVITY**

Michiel Panders and Andreas Rüsseler of R&M share some insights into current and upcoming developments in connectivity

58

**PROJECTS AND CONTRACTS**

Case studies and contract wins from around the globe



60

**SUSTAINABILITY**

Malcolm Howe of Cundall questions whether Power Usage Effectiveness (PUE) is a competent metric for a sustainable future

46

**QUICK CLICKS**

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

48

**CONNECTORS AND CONNECTIVITY**

Cindy Montstream of Legrand identifies the key considerations when selecting connectivity solutions

64

**PRODUCTS AND SERVICES**

The latest network infrastructure products, systems and services

52

**CONNECTORS AND CONNECTIVITY SOLUTIONS**

A selection of the very best connectors and connectivity solutions currently available

67

**FINAL WORD**

Sachin Deshpande of Tech Amigos discusses the benefits of adopting a hybrid cloud strategy



## Certified Data Centre Project Management (CDCMP®)

### 5 Day Program

**Establish a robust project baseline and a comprehensive plan for a complex, high value, high risk data centre expansion project. Working with a multi-disciplined project team, you will demonstrate strategic leadership and provide comprehensive direction to the business focussed on efficient project delivery, minimising risk and maximising return on investment.**

The comprehensive CDCPM® program provides in-depth knowledge of all elements of project management. It also evaluates successful project delivery from all directions, including the need to ensure that data centre operators, and their critical facilities maintain operational capability without disruption whilst continuing to meet the strategic needs of the business throughout the project lifecycle.

## NEW PROGRAM

### Certify your knowledge & gain:

- ▶ Unrivalled knowledge, expertise and capability to deliver complex data centre expansion projects
- ▶ BTEC Level 5 Award
- ▶ Official CDCPM® Certification
- ▶ Use of CDCPM post nominal title
- ▶ Use of the CDCPM® logo
- ▶ Use of the CDCPM® Digital Badge

[Request Program Overview >](#)

# Time travel

## 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




All rights reserved.

No part of this publication may be used, transmitted or produced in any form without the written permission of the copyright owner. Applications for written permission should be addressed to

[info@chalkhillmedia.com](mailto:info@chalkhillmedia.com)

The views and comments expressed by contributors to this publication are not necessarily shared by the publisher. Every effort is made to ensure the accuracy of published information.

© 2022 Chalk Hill Media

 As we approach the end of another year it's a good time to reflect and look forward to what's ahead. Before I go any further, I'd like to say a massive thank you to all the readers, contributors and organisations from across the globe who make Inside\_Networks what it is.

So back to business. Despite the ongoing disruption caused by the coronavirus pandemic, we are certainly in a better place than we were a year ago and with the edge, 5G, the internet of things, artificial intelligence, power over Ethernet and ever more intelligent buildings all making huge strides, there is certainly a growing sense of optimism and excitement in the air. To sum up the last 12 months and to look forward to the year ahead, we've asked a panel of experts from different sectors to pick their highlights and suggest what the future has in store.

Also in this issue, we focus on what are often the unsung heroes of the network infrastructure – cable management and labelling. They should never be taken for granted and Cindy Ryborz of Corning Optical Communications explains how to plan for effective cable management. Following Cindy's excellent article, Joseph Bowden of Brady Corporation and Ian Bankhurst of Cable Management Warehouse (CMW) join forces to look at how labelling can help avoid downtime, temper rising maintenance costs and create efficient physical asset visibility.

Developments in connectors and connectivity based technology continue to have a significant impact on the way that network infrastructures are designed, configured and operated. To find out more, Cindy Montstream of Legrand identifies the key considerations when selecting connectivity solutions and R&M's Michiel Panders and Andreas Rüsseler share some insights into current and upcoming developments in this area.

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

Wishing you and yours all the best for 2022!

**Rob Shepherd**

Editor



# Wi-Fi analysis made easy with AirMapper™ Survey InSites™



InSites™ intelligence  
now makes it easy for  
anyone to quickly  
identify Wi-Fi network  
problems.

[Learn More >](#)







# Flex IT

Flex your UPS muscle with **Lithium-Ion technology** at the edge.



Power IT with advanced battery technology now featured in the **Vertiv™ Edge Lithium-Ion UPS**, delivering the same great benefits you've come to expect – colour LCD, high efficiency up to 98%, and Vertiv™ Power Insight power management software.

Did we mention you'll lower your total cost of ownership by up to 50%?



## What's Your Edge?

[Vertiv.com/EdgeLi-Ion](https://Vertiv.com/EdgeLi-Ion)



## Colt Data Centre Services accelerates hyperscale strategy and sells 12 colocation sites

Colt Data Centre Services (DCS) has completed the sale of 12 colocation sites across Europe to AtlasEdge Data Centres. Having conducted a thorough review of its portfolio, Colt DCS identified the sites that were better suited for an operator such as AtlasEdge, which is focused on developing the emerging colocation market across Europe.

The sale will allow Colt DCS to focus on accelerating the execution of its hyperscale strategy and increase capacity in key markets that its customers want to enter and expand in. The hyperscale facilities that



it currently owns and operates, including those that are currently under construction, will not be affected by the sale and will continue to be owned by Colt DCS.

‘Demand for data storage and cloud capabilities has never been higher, and so is the need for businesses to scale and find capacity,’ commented Niclas Sanfridsson, CEO at Colt DCS. ‘By restructuring and focusing on our hyperscale facilities, we can meet our customers’ needs on demand with true scalability and efficiency, while meeting their sustainability targets.’

## More than half of UK businesses plan to hire a CISO in the next two years

Research from Fastly, based on insights from information security and IT professionals across 250 UK companies, has revealed that only a quarter of businesses currently employ a chief information security officer (CISO) but a further 56 per cent are planning to hire one within the next 24 months.

The research also found that certain sectors are ahead of the curve, with 75 per cent of businesses in the construction/engineering sector already having a CISO in place, closely followed by local/national government (60 per cent) and aerospace (50 per cent). Despite it being a relatively new role, the research shows that CISO

parameters are still unclear to many, with 31 per cent believing that CISOs should have an in-depth understanding of all areas of IT.



Sean Leach, chief product architect at Fastly, said, ‘Hiring a CISO is a crucial step in tackling the security threats facing organisations. However, they need to ensure this isn’t just a box ticking exercise and that they fully embed their CISO into the organisation. This will come from

a joint investment in both dedicated personnel, with clear and defined roles, paired with robust and adequate security tools.’

## Global cloud services spend hits record \$49.4bn in Q3 2021

Cloud infrastructure services continued to be in high demand in Q3 2021, with worldwide spending increasing 35 per cent to \$49.4bn. This was driven by a range of factors including ongoing remote working and learning, and the growing use of industry specific cloud applications.

Cloud services spending is still being affected by the digital transformation efforts required to maintain business continuity during coronavirus pandemic related disruptions. In response, major cloud services providers have emphasised geographic data centre expansion to meet rising demand. However, the impact of the global chip

shortage is imminent, as data centre component providers are seeing longer lead times and higher prices, which will be passed on to the largest providers.

‘Overall compute demand is outgrowing chip manufacturing capabilities, and infrastructure expansion may become limited for cloud service providers,’ said Canals’ research analyst, Blake Murray. ‘The providers



building an advantage are focused on developing their go to market channels, along with their product portfolios, to catch up with an increasingly wide variety of customer use cases that has fuelled demand since the start of the pandemic.’

## OCP announces its first OCP Experience Center in Southeast Asia

Singapore will be home to the first Open Compute Project (OCP) Experience Center in Southeast Asia. Several OCP Community members have come together to create a hands-on environment to see, evaluate and learn about OCP Accepted and OCP Inspired hardware in a facility that is OCP Ready certified.

Hosted in Princeton Digital Group’s (PDG) SG1 facility in Singapore, the aim of the OCP Experience Center is to share industry-wide best practices from the OCP Community for data centre and server technology with Singapore enterprises. It

will provide a space for strategic discussions and engagement into ways to accelerate transformation toward a highly efficient infrastructure.



Steve Helvie, vice president of channel at the OCP, said, ‘Over the past year the local OCP members focused on a vision of bringing hyperscale innovation of OCP hardware designs to Singapore based enterprises.

The collaboration in the region has been outstanding and the OCP appreciates the hard work of our members and their contributions in making this OCP Experience Center a reality.’

## Meeting net zero target depends on better emissions data according to BCS

Government and industry need better and richer data to deliver on their 26th UN Climate Change Conference of the Parties (COP26) pledges to combat climate change, according to a survey of IT professionals.

Seven out of 10 tech experts (71 per cent) were not confident key departments and policymakers have the right data to achieve net zero, according to a survey by BCS, The Chartered Institute for IT. Hitting the deadline for net zero will mean gathering detailed, real time data on everything that generates CO<sub>2</sub>. 61 per cent said that industry as a whole was not currently



using IT and digital technology effectively against climate change.

Alex Bardell, chair of BCS' Green

IT Specialist Group, said, 'There is huge potential in existing digital technology to cut carbon emissions and reach vital targets – but we need better, richer data and far more qualified data scientists to do this. The trends and spikes in that data are essential to decide the best way to save the planet as quickly as possible, whilst

building a sustainable economy and quality of life. Otherwise, the only way we'll know what's going on is when the next extreme weather event wipes out our towns and countryside.'

## Colt Technology Services and N2S announce pioneering bioleaching trial

Colt Technology has been partnering with N2S on a pioneering bioleaching trial for the past six months. N2S is the first company in the UK to extract precious metals using bioleaching and its technique was developed in partnership with Coventry University.

The innovative process is an environmentally considerate way to extract precious metals, including gold and copper, from electronic waste using microbiological techniques and living organisms. The extracted precious metals can be reused, rather than being wasted in landfill, in turn,

reducing pressure on mining for virgin materials. Bioleaching also produces no air pollution, unlike other extraction methods

such as smelting and incineration, which result in significant greenhouse gas emissions.

Steve Morris, managing director at N2S, said, 'Using our unique biotechnology process, we can extract large amounts of precious metals – sometimes up to 40 per cent of a technology circuit board is made of copper. These

metals can then be reintroduced into the manufacturing process to create a circular economy.'



## University Technical College Heathrow launches first data centre focused curriculum

University Technical College Heathrow (UTC Heathrow) has unveiled its new Digital Futures Programme – a curriculum aimed at giving 14-19 year old students the best possible start to a career within the digital infrastructure industry. This new programme will help to future proof the industry by inspiring a new generation to join it and enjoy a rewarding career.

The programme curriculum has been designed in close collaboration with CNet Training, Virtus Data Centres, CyrusOne, CBRE, Amazon Web Services (AWS), LMG, Ark Data Centres and Yondr. They have all committed funding and resources to the programme to guarantee that students receive a first class technical education. The annual Digital Futures Programme intake is limited to 100 students at age 14 and 150

students studying the Level 3 engineering curriculum.

The idea for the Digital Futures Programme came from a meeting between Andrew Stevens, president and CEO of CNet Training, and the Baker Dearing Trust, an organisation which develops UTCs. After shaping the proposition, Stevens worked with TechUK and UTC Heathrow to build a collective of likeminded organisations that wanted to get involved and collaborate.

Stevens said, ‘The skills gap is not getting any easier for the digital infrastructure industry. We all need to work together and do things in a way that will make a real difference at a time when young people need inspiration, support and the opportunity to secure a career with huge opportunities. This is a problem that the industry can only tackle head-on by working collectively.’



### NEWS IN BRIEF

Kao Data and Scan have established a dedicated high performance computing (HPC) and artificial intelligence (AI) ecosystem, which is perfectly suited for advanced computing users who utilise NVIDIA's latest generation hardware.

Schneider Electric has entered into a partnership with Chilldyne.

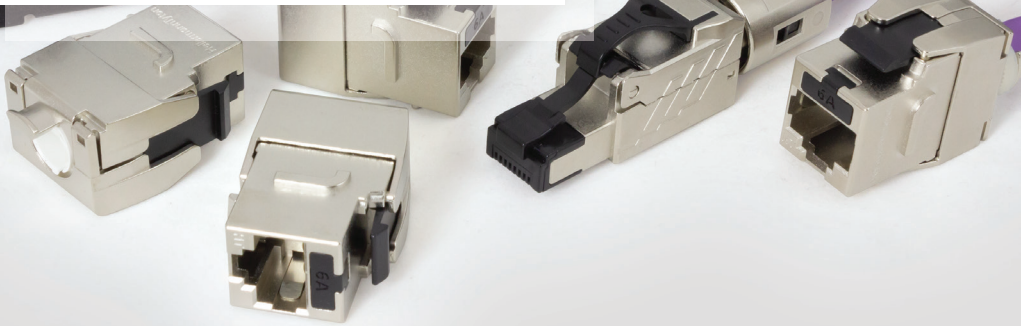
Keysource Group has announced the further expansion of its Digital Infrastructure Advisors brand into the USA with the establishment of Digital Infrastructure Advisors (Americas). Headquartered in Virginia, the company will be led by industry veteran, Mark Lambourne.

nVent Electric is collaborating with Iceotope Technologies to offer modular integrated solutions for data centre, edge and high performance computing (HPC) applications.

# HTC Series Cat6A Field Terminated Plug

Quick and easy onsite terminations with the  
Cat6A Tool-Free RJ45 Plug.

**MADE TO CONNECT**



Watch the  
Termination Video  
on Youtube



# Get the message

## Hi Rob

I read with interest last month's Question Time in Inside\_Networks. As the world gets more digitalised, there is increasing demand for all industries to adopt more sustainable ways of preserving the planet. This is becoming particularly important in the telecommunications industry, leading to an increased pressure for operators to prioritise sustainable, eco-friendly solutions to reduce energy consumption, environmental impact and help facilitate a greener world.

As broadband traffic rises due to the coronavirus pandemic, so does the need for high speed, resilient connectivity, with an estimated 4.6 billion people using the internet in January 2021 alone, according to research from the Digital 2021 Global Overview Report. With this rising demand for reduced energy consumption in cabling solutions, keeping costs and time to market duration down can be challenging. However, I believe that by leveraging high capacity optical fibre systems, operators

will be able to provide fast, cost effective connectivity, as well as reduce unnecessary emissions and energy consumption across the entire supply chain.

Many fibre access technologies, such as fibre to the home (FTTH), 5G and gigabit passive optical networking (GPON), have been developed in recent years to update ageing infrastructure and provide data rates that meet connectivity demands. But with several options capable of satisfying the requirement, operators should consider the power consumption and energy efficiency of the different access technologies before making their decision.

There are various reasons why optical fibre may be the key energy efficient solution that operators seek. Optical fibre has been shown to reduce energy consumption, due to gains made during production and built upon further once it has been deployed across networks and used for last mile connectivity. This is due to its use of spectrum, which can be lit on

## Rittal – The System.

Faster – better – everywhere.

Looking for the right solution for your network or server application?

Then look no further.



ENCLOSURES

POWER DISTRIBUTION

CLIMATE CONTROL

demand, rather than constantly, at each end point. As a result, optical fibre can be viewed as the more energy efficient option when compared to its rival counterparts asymmetric digital subscriber line (ADSL), public switched telephone network (PSTN) and mobile, through its reliability, longer lifespan and future proofed capacities.

However, there is a long way to go. Optical fibre connections account for just 26 per cent of total broadband connections on average, according to the Organisation for Economic Co-operation and Development (OECD). Further adoption of optical fibre would not only bring a sustainable benefit, but it is crucial for enabling reliable and easily accessible connectivity for emerging technologies globally, facilitating innovation long-term with eco-friendly processes.

In order to encourage this environmentally friendly stance across the industry, I believe that operators must come together to make sustainable

networks a reality. This can be achieved by designing more optical fibre solutions that prioritise eco-friendly materials, while still providing the digital infrastructure to deliver low latency and high bandwidth. Not only operators, but the entire ecosystem of industry players must adopt more sustainable alternatives to significantly reduce emissions and energy consumption. Only then will we be able to unlock the eco-friendly world of tomorrow.

**Jan Schindler**  
Prysmian Group

#### Editor's comment

Jan makes some excellent points that add to those already raised in Inside\_Networks regarding the environmental advantages offered through the use of optical fibre. However, as he also points out, more must be done and this message needs to be promoted with a sense of determination and vigour by all relevant parties.



# VX IT

## The world's fastest IT rack

IT INFRASTRUCTURE

SOFTWARE & SERVICES



[www.rittal.co.uk](http://www.rittal.co.uk)





IN PARTNERSHIP

**MAYFLEX**  
A Sonepar Company

CERTIFIABLY BETTER TESTING



TRY IT



TEST IT



TRUST IT

AEM testers are now available from Mayflex in the UK.  
Together we provide 'Certifiably Better Testing'.

### Why AEM?

- Global leader in test and measurement innovation
- Fastest CAT6A certification test on the market at 6 seconds
- Multi award winning cable certification platforms
- 3GHZ Platform - Future built for the next generation of testing
- 3-year care plan and UK calibration on CV100 TestPro Platforms
- Participation in development of industry including - IEEE, ISO and TIA
- Established market share in USA, and APAC
- Approved as part of leading cabling vendor warranty programmes
- Main and remote are the same. Both smart and can be deployed separately to conduct POE, Multi-Gig and Network Testing



**TRADE-IN  
SAVE UP TO  
£2750**


Trade-in any 5e certification tester (working or not!) before 31.1.22 and you could receive up to **£2750 cash back** when you purchase a TestPro kit. Plus you will also get to choose a free accessory or adaptor set worth up to **£936**.

Contact Mayflex on **0800 75 75 65**  
**www.mayflex.com**

Click here  
to find  
out more

# That was the year that **was**

With 2021 coming to a close, [Inside\\_Networks](#) has assembled a panel of industry experts to review the events of the last 12 months and suggest what 2022 might have in store


 In 2020 the coronavirus pandemic turned the world upside down and for much of 2021 companies across all areas of the enterprise and data centre network infrastructure sectors continued to navigate the choppy waters by being flexible, innovative and daring. This has paid off and we can all approach 2022 with renewed confidence and enthusiasm.

Throughout all the upheaval 5G, the cloud, the internet of things (IoT), energy efficiency, liquid cooling, Wi-Fi 6 and machine to machine (M2M) communications continued to make an impact. Notably, the 26th UN

Climate Change Conference of the Parties (COP26) also encouraged the data centre sector to refocus its approach to sustainability and reduce the carbon emissions it produces. This is something that the Climate Neutral Data Centre Pact (CNDCP) should help to facilitate.

With all this and more, there's never a dull moment and to discuss the highlights of 2021 and predict the big talking points of 2022, Inside\_Networks has assembled a panel of experts to give us their thoughts and opinions.

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



WHAT HAVE BEEN THE MOST SIGNIFICANT EVENTS WITHIN THE ENTERPRISE AND DATA CENTRE NETWORK INFRASTRUCTURE SECTORS OVER THE LAST 12 MONTHS, AND WHAT DO YOU THINK WILL BE THE KEY TALKING POINTS DURING 2022?

# STEPHEN BOWES-PHIPPS

SENIOR DIGITAL INFRASTRUCTURE CONSULTANT AT PTS CONSULTING

2021 started off in the same vein as 2020. We saw continued sharp growth with new data centres, major mergers and acquisition (M&A) activity and, certainly from what we've seen amongst our clients, lots of cloud strategising, planning for migrations and data centre resiliency enhancements on the back of some high profile downtime and well reported major incidents.

It used to be the case that data centre contracts were 'sticky'. Once clients moved their infrastructure into a colocation data centre, then the likelihood of them moving out, with all the disruption that major migrations cause, was remote. However, advanced use of hybrid data centre virtualisation paradigms has tipped the scales back in favour of the client. If workloads are in Azure, Amazon Web Services (AWS) or Google Cloud, does it matter where your data centre network is?

Hybrid IT really can focus on the operational mode that is most cost effective, whether that's on premises or in the cloud. I rarely come across a large enterprise that can close any or all of its data centres just because it has now become cloud enabled. And cloud repatriation has entered the lexicon this year amongst digital infrastructure

specialists, as businesses seek to get a handle on the escalating costs of their existing cloud expenses.

Predicted cloud operational expenditure can look minimal, but when scaling in elastic workloads and data ingress and egress, actual costs can quickly escalate. Getting the contract right before you commit is critical.

Expect more of the same in 2022 – more space being built, more M&A activity and more people trying to work out the most appropriate location for their IT workloads. Many organisations are now beginning to realise that even the biggest players can fail (Facebook anyone?) and that their resiliency is not just based on physical hardware but the network software layer too.

I've long argued that for most organisations data centre tiering is unimportant and I think I am beginning to be proven right. Availability needs to be based on the overall architecture and not the infrastructure alone.



**'EXPECT MORE OF THE SAME IN 2022 – MORE SPACE BEING BUILT, MORE M&A ACTIVITY AND MORE PEOPLE TRYING TO WORK OUT THE MOST APPROPRIATE LOCATION FOR THEIR IT WORKLOADS.'**

# REPUTATION IS EVERYTHING

Thinking of repositioning your brand?

Do you aspire to be  
a global phenomenon?

If you are looking to refresh, redesign  
or reposition your brand in one  
of the most fragmented and  
competitive sectors - get in touch  
with the agency that make it happen.

hello@thebrandmarquee.co.uk



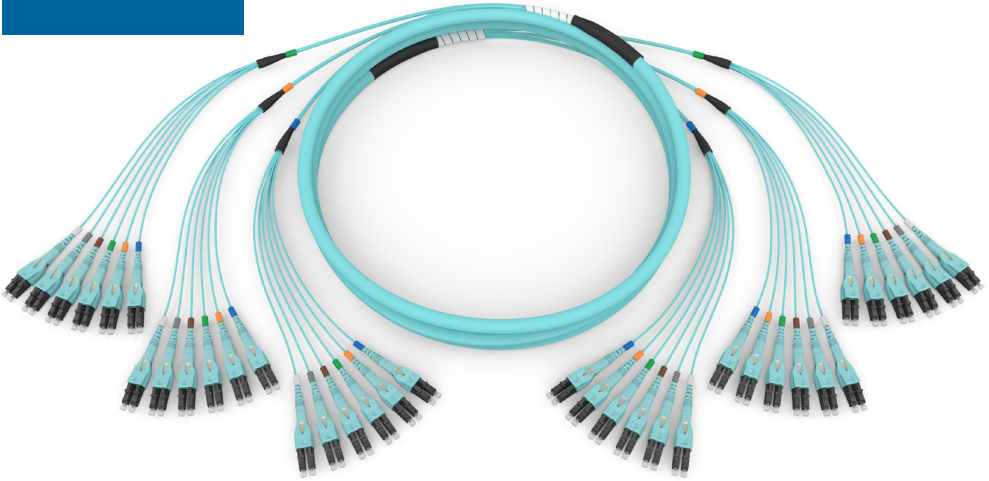
— the —  
**brand**  
marquee

Telephone: +44 (0)203 813 1103  
Email: hello@thebrandmarquee.co.uk

#ConnectingYourBrand

www.thebrandmarquee.co.uk

CORNING



# Connect with Quality.

## Corning Fibre Optic Cable Assemblies.

- Single- and multifibre patch cords
- Pigtails for indoor and outdoor use
- Our bend-insensitive Corning® SMF-28® Ultra and ClearCurve® single-mode and multimode fibres are suitable for even the most challenging environments
- State-of-the-art production and cleaning processes for reliable connector performance (Corning® CleanAdvantage™ Technology)
- A wide variety of options for different fibre, cable, and connector types
- Scalable manufacturing programs to accommodate your deployment schedule

Are you Corning connected?

Visit us to learn more about our pre-terminated fibre optic cables:  
[www.corning.com/emea/en/patchcords](http://www.corning.com/emea/en/patchcords)



## EMMA FRYER

ASSOCIATE DIRECTOR DATA CENTRES AT TECHUK

If you had asked me about the last 18 months rather than the last 12, I would immediately have said that the establishment of a dedicated data centre team within government was the most significant development for the UK sector, with long-term and far-reaching implications. Obviously that fails the time criterion but fortunately the last year has been very eventful, so we still have a smorgasbord of activity to choose from.



However, rather than churning out a long list, I'm going to pick two things that I think are significant, but in different ways. These are the National Investment and Security Act and the Climate Neutral Data Centre Pact (CNDCP).

For anyone who has been living on Mars for the last few years, the National Security and Investment Act extends the government's power to scrutinise acquisitions, mergers and other transactions in the interests of national security. The objective is to prevent 'unfriendly entities' accessing sensitive data and/or threatening national security. Data centres, as one of the new sectors captured under the bill, are firmly in the crosshairs. While we anticipate a light touch, and in many ways the bill is overdue, it represents a seismic change in the UK's stance on foreign direct investment (FDI).

My second example is the CNDCP. Launched in January 2021, it is a self-

regulatory initiative by European cloud and data centre operators to address political concerns about the sustainability credentials

of data centres.

Signatories have to meet performance benchmarks in some areas and commit to develop new key performance indicators (KPIs) in others. CNDCP looks set to increase renewables procurement and transparency, and has stimulated a much more productive dialogue with the European

Commission, which should help inform future policymaking.

Looking ahead, some wishful thinking. We are going to turn the spotlight on the persistent problem of legacy on-premise computing. We are going to apply the same scrutiny and impose the same requirements on these activities as we do on commercial operators. A pipe dream? Maybe... But this would finally bottom out what is going on under the radar and deliver very significant energy savings. Wish me luck.

**'CNDCP LOOKS SET TO INCREASE RENEWABLES PROCUREMENT AND TRANSPARENCY, AND HAS STIMULATED A MUCH MORE PRODUCTIVE DIALOGUE WITH THE EUROPEAN COMMISSION, WHICH SHOULD HELP INFORM FUTURE POLICYMAKING.'**

# OWEN WILLIAMS

HEAD OF INTELLIGENT BUILDING SOLUTIONS AT LMG

There are three key developments we've seen gain traction this year and which I believe will become increasingly significant over the next 12 months.

Firstly, passive optical networks (PONs) and gigabit PONs (GPONs). PON technology has its origins in the telecoms sector and although it's been around for many years, it's had an enterprise makeover along with a recalibration of its cost base, setting the stage for a significant impact on building services networks over the next few years.

Reduced cost and real estate footprint, coupled with increased resilience and ease of deployment, make PONs an attractive proposition for the residential and hospitality sectors. Combining PON tech in the backhaul with traditional networks at the edge will enable hybrid building networks to deliver benefits to landlords, property developers and occupiers across all markets.

Secondly, internet of things (IoT) sensor networks. The emergence of low cost wireless gateways able to support a wide variety of operational technology (OT) wireless protocols is set to underpin the rapid growth of IoT sensor networks across all market segments.

This is particularly true of the enterprise environment, where having a real time understanding of indoor air quality and occupant density is a post-pandemic requirement for all landlords and businesses wishing to take a proactive approach to improving the health and

wellbeing of building occupants. Wireless sensors are easy and quick to deploy, and their cloud based software ensures seamless integration with existing building management and control systems.

Last but not least, smart building integration platforms. Cloud based smart building management systems have come a long way over the past 12 months and will continue to develop, becoming a key mainstream technology over the coming year.

New smart building performance standards such as those championed by WiredScore, the Well Building Institute and Leesman have emphasised

the role that smart enablement platforms play in delivering the benefits of smart buildings to landlords and occupants. These cloud based software platforms, with well-developed integration stories, backed by a wide range of out of the box use cases, are set to ignite PropTech's market potential. In conjunction with the emergence of experienced, practical digital building consultants and master systems integrators, smart buildings will have finally come of age.



**'CLOUD BASED SMART BUILDING MANAGEMENT SYSTEMS HAVE COME A LONG WAY OVER THE PAST 12 MONTHS AND WILL CONTINUE TO DEVELOP, BECOMING A KEY MAINSTREAM TECHNOLOGY OVER THE COMING YEAR.'**

# SARAH PARKS

DIRECTOR OF MARKETING AND COMMUNICATIONS AT CNET TRAINING

The last year has seen the emergence and adoption of two great initiatives to help encourage new people into the digital infrastructure industry and, more importantly, give them a helping hand into it.

The Network Cable Installer (NCI) Apprenticeship is the first government funded apprenticeship for the network cable installation sector across England and Wales. The great thing about it is that it is developed by companies across the network infrastructure space, which ensures the curriculum provides the knowledge, skills, certifications and qualifications that are needed now.

Another first is the launch of a University Technical College dedicated to the data centre sector. Based in Heathrow, the college has launched the Digital Future Programme, which is the result of committed industry partners joining together to set the curriculum of a programme specifically for 14-19 year olds. The students leave their usual schools to attend the college to gain the essential knowledge and skills needed to thrive in technical careers within the data centre sector. It will help future proof the industry by inspiring a new generation to join it and enjoy a rewarding career.

Talking points for 2022 will no doubt continue to be around how to find new talent and deal with recruitment issues, especially as it now seems to be a

candidate's market where you have to move quickly to secure the right people. This is coupled with the ever-inflating salaries and bigger benefits packages needed, as data

centre operators compete against each other in the race to recruit. This highlights the need for us all to keep talking about data centres to make them more visible to all and hopefully attract more interest.

When it comes to professional development, there is a need to continue to look at education and how it is delivered. Of course, everything moved

to remote attendance program delivery during the coronavirus pandemic, but some had already been doing this for a number of years. However, there is a need to continue to evolve education delivery to incorporate innovative ways to ensure the learning experience continues to be engaging and enjoyable.



**'TALKING POINTS FOR 2022 WILL NO DOUBT CONTINUE TO BE AROUND HOW TO FIND NEW TALENT AND DEAL WITH RECRUITMENT ISSUES, ESPECIALLY AS IT NOW SEEMS TO BE A CANDIDATE'S MARKET WHERE YOU HAVE TO MOVE QUICKLY TO SECURE THE RIGHT PEOPLE.'**



## TREVOR KLEINERT

MANAGING DIRECTOR AT KLEINERT CONSULTING

Some would say that if you are not aware of the surging growth of data centres announced for construction, or currently under construction, across the globe that you must live on another planet. The growth over the past 2-3 years has seen the UK, Ireland, Japan, Singapore and Australia leading the charge outside of North America. This is not to forget South Africa and India announcing significant data centre construction in recent times.

In the last 12 months we have seen an increase in remote monitoring as a result of the consequences of the coronavirus pandemic. This has coincided with greater edge deployment, an increasing colocation footprint, hyperscale data centre construction on the rise and rack densities on the increase.

Cooling technologies have developed and liquid cooling has become more common in some regions, with Asia being a main driver. Submersible pods containing a mini data centre, originally introduced by Microsoft, are also potentially becoming viable options for data centre locations.

Over the next year construction will continue to increase worldwide and in locations we would not normally consider. Hyperscale construction, in particular, will continue at pace and cooling will become an

even more critical requirement as densities increase along with the demand for power. As a result, green data centre initiatives will ramp-up from current steady growth and

more sustainability will be considered paramount. Facilities will also see greater use of artificial intelligence driven by data centre infrastructure management (DCIM).

Let's also not forget about the importance of security. As we know, security is a critical component of any data centre and an area under significant growth due to the increase in remote monitoring. All of the aforementioned will bring the demand for an increase in data

centre design awareness and education to meet the demands of client requirements.

In summary, the future looks bright for data centre and new technology growth throughout 2022 and beyond.



**'SOME WOULD SAY THAT IF YOU ARE NOT AWARE OF THE SURGING GROWTH OF DATA CENTRES ANNOUNCED FOR CONSTRUCTION, OR CURRENTLY UNDER CONSTRUCTION, ACROSS THE GLOBE THAT YOU MUST LIVE ON ANOTHER PLANET.'**



LET'S CONNECT!

FLUKE  
networks  
Fujikura  
OPTRONICS

## Equipment Hire

# Copper & Fibre test kits now available for Daily & Weekly Hire

- Fluke DSX-5000 Main & Remote
- Fluke OTDR
- Fluke CFP-QUAD Modules
- Fujikura 70s Splicer + Cleave Tool
- Optronics MKI Splicer + Cleave Tool
- Optronics MKII Splicer + Cleave Tool

**DUNASFERN**  
Inc. AURIGA



For more information about the **Fluke Networks, Fujikura and Optronics** Equipment Hire range Dunasfern offer visit  
[www.dunasfern.com](http://www.dunasfern.com) | 01908 282200 | [enquiries@dunasfern.com](mailto:enquiries@dunasfern.com)



Audit | Design | Build | Test | Maintain

## ROBERT LUIJTEN

TRAINING MANAGER AT FLUKE NETWORKS

For data centres the biggest challenges to network infrastructure occurred in 2020 at the early stages of the coronavirus pandemic, when large numbers moved to remote working.

This caused significant changes in data usage and requirements. That said, data centre infrastructure was largely ready to handle the change of usage.

There has been no such dramatic change in 2021, with the widespread return to the office. As such, it is my opinion that network infrastructure change over the next 12 will consist of iterative upgrades, as networks require even greater bandwidth.

Bandwidth intensive applications and cloud computing continue to drive system requirements. Business owners are looking to future proof enterprise and data centre network infrastructure by increasing the deployment of fibre optic technology.

Of course, fibre cabling is both more expensive and more delicate than twisted pair cabling, so copper continues to have a bright future as well. Many data centres still employ Category 6A cabling as, despite being launched to great fanfare, there appears to be no great urgency to adopt Category 8 cabling. It is most likely that data centres will prefer an upgrade to fibre once

any existing copper infrastructure needs replacing. Either way, the shift is progressive and will not occur overnight.

One of the additional trends we are seeing is the move towards low loss fibre components. In practice we see angled physical contact (APC) connectors having similar loss characteristics as splices. To properly test modern fibre links, custom test limits are therefore

specified by cabling manufacturers. In addition, the fibre reference procedure must now be repeated multiple times per day, rather than just once at the beginning of the working day. It is critical that this is done using the 1-jumper method, as only then will negative loss readings be avoided.



'MANY DATA CENTRES STILL EMPLOY CATEGORY 6A CABLING AS, DESPITE BEING LAUNCHED TO GREAT FANFARE, THERE APPEARS TO BE NO GREAT URGENCY TO ADOPT CATEGORY 8 CABLING. IT IS MOST LIKELY THAT DATA CENTRES WILL PREFER AN UPGRADE TO FIBRE ONCE ANY EXISTING COPPER INFRASTRUCTURE NEEDS REPLACING.'

## SCOTT BALLOCH

DIRECTOR OF ENERGY AND SUSTAINABILITY AT COLT DATA CENTRE SERVICES

The challenge of making the data centre industry more sustainable has ignited an ongoing debate throughout this year – and shows no sign of slowing in 2022.

In light of the 26th UN Climate Change Conference of the Parties (COP26), the expectations on technology organisations to show progress on their green transition is growing. It is a critical time for those

operating in the sector to not only lead by example but also help their customers and suppliers bring about positive change too.

With greater dependency on digital infrastructure and data centres during the coronavirus pandemic, there are increasing concerns around energy consumption within the IT industry. In fact, it has been reported that the industry alone generates around one per cent of overall global electricity demand. As part of a sustainability strategy, it's important to be transparent and open about your vision and the progress against achieving this. Therefore, leadership needs to communicate regularly and clearly with all different stakeholders.

Companies need to set science based


targets that are properly accredited. At the moment the reporting standards are changing but pledging sustainability efforts is voluntary. Therefore, organisations

need to ensure they efficiently measure and mitigate carbon, as well as regularly report audits and demonstrate progress they're making towards set targets. The methodology should be designed to align with commonly agreed goals such as those from the Paris Climate Agreement. This approach prevents sustainability efforts from being purely a market positioning initiative and will drive authentic change within and outside of an organisation.

In September 2021 we announced our commitment to achieving global net zero carbon for all our own operations by 2030 using reduction targets approved by the Science-Based Targets Initiative (SBTi). Our short-term goal, which will be our focus throughout next year, is ensuring 75 per cent renewable electricity for all sites globally by 2023.



'IN LIGHT OF THE 26TH UN CLIMATE CHANGE CONFERENCE OF THE PARTIES (COP26), THE EXPECTATIONS ON TECHNOLOGY ORGANISATIONS TO SHOW PROGRESS ON THEIR GREEN TRANSITION IS GROWING.'



## **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](http://www.rdm.com)  
**Reichle & De-Massari UK Ltd**  
+44 (0) 203 693 7595



# TREND Networks launch optical fibre testers

TREND Networks has expanded its fibre testing range with seven affordable new products

**▶** TREND Networks has introduced a simple handheld OTDR, Passive Optical Network (PON) OTDR, Power Meter and Light Source and Inspection Probe to its FiberMASTER series, which will enable cable installers to get dependable test results, while saving time on training, as well as thousands of pounds.

## Test match

The new testers uniquely feature industry leading dynamic range, enabling users to test longer fibres, PON systems and to maintain accuracy on high loss fibres.

'Demand for fibre cable is growing as high data volumes and bandwidth requirements are increasing,' said Tim Withershoven, marketing director for TREND Networks.

'At the same time, skilled technicians are hard to find and those coming into the industry often have minimal training. The new range is designed so that even those with limited experience or training can quickly be up and running, carrying out accurate tests while saving more than 50 per cent compared to other premium brands.'

## Sizing it up

The new FiberMASTER optical time domain reflectometer (OTDR), designed for Tier 2 fibre cable certification, is among the smallest touchscreen OTDRs in the world and is designed, engineered and manufactured in the USA to ensure quality. It features simple set-up to ensure test accuracy to ISO/TIA/IEEE standards. Available in Quad, Multimode and Singlemode models, the OTDR includes easy to understand visual event maps that help even novice users to interpret test data correctly.

Convenient and handheld, installers can quickly access a wide range of key troubleshooting data with the OTDR, such as distance to fault, length measurement and distance to connectors or splices, via the tester's intuitive user interface. For dependable accuracy, distance is independently verified by German test laboratory, GHMT AG, in accordance with Telcordia GR-196 specifications. Professional PDF reports can also be generated at the end of a job, while a PON OTDR model for telecoms applications is also available.



# es new



# TREND NETWORKS

## Products in the FiberMASTER series



### Leading light

The range also includes a high quality Power Meter and Light Source kit to get reliable, instant results to identify how much loss there is on a cable, to support reporting of multimode and singlemode cabling. Fibre optic connectors are tested to industry standards to provide a pass/fail result, and test records and reports can be saved and generated.

The FiberMASTER OTDR, PON OTDR and Power Meter and Light Source all work with the compact new FiberMASTER Video Inspection Probe to capture images of the connector on each end of the cabling, so that users can check for dirt or damage. The handheld tester provides automatic pass/fail results to the standard for connector end faces.

'The Video Inspection Probe is truly an essential for any kind of fibre optic measurements or troubleshooting,' explained Widdershoven. 'When fibre optics have problems it's usually due to contamination on connectors that you can't see with the naked eye. You should always check a connector is clean before you test it, as dirt will affect the accuracy of your results. Similarly, you can avoid wasting time on repairs if it is only cleaning that is needed.'

### Centre of excellence

The new range of FiberMASTER products has been developed at TREND Networks' Research & Development Excellence Centre for fibre products in the USA. It has more than 30 years' experience developing OTDRs and other fibre testing equipment.

'Testers are renowned for being a significant investment, so our new product range is affordably priced so that cable installation companies can ensure that all technicians have the quality testers they need, whenever they need them, and don't have to share equipment,' commented Widdershoven.

'As a global brand, our efficiencies in production, vast experience and economies of scale in engineering and development enable us to keep costs competitive, while still maintaining all the product benefits.'



### Next step

The FiberMASTER series ideally complements the existing range of TREND Networks testers. It is available to pre-order now from TREND Networks distributors or direct from the online shop at by [CLICKING HERE](#). [www.trend-networks.com](http://www.trend-networks.com)



## Kao Data appoints Matthew Harris as chief financial officer

Kao Data has appointed Matthew Harris as its chief financial officer (CFO). Following his position as managing director at Goldacre Noé Group, Harris will help spearhead the next phase of the company's growth, engaging with new and existing customers within the financial services, life sciences, enterprise and cloud sectors.

'Having been firmly engaged with the company's vision and its growth strategy from inception,



I'm delighted to have joined Kao Data formally as its CFO,' said Harris. 'Kao Data is truly on the cutting edge of tech, working with some of the industry's foremost thought leaders and engineers to push the boundaries of design and innovation. Our facilities have been engineered to support the UK government's National AI Strategy and have created a blueprint for the future of high performance data centres.'

## Global Technical Realty expands its leadership team

Global Technical Realty (GTR) has appointed Neil Grocock as director of operations and construction. With more than 20 years in the construction industry, he brings with him a wealth of expertise in the planning, procurement, management and delivery of numerous major data centre developments.

Joining as part of the leadership team, Grocock assumes responsibility for GTR operations, and will be focused on ensuring the highest level of customer

service, operational excellence, health and safety, connectivity, security and

facilities management across the GTR real estate portfolio. He will also lead the construction activities across GTR's new developments.

'I'm excited to be joining GTR at such an incredible time for the company and the entire data centre industry, which is seeing a period of growth and rates of construction that have never been experienced at this level before,' said Grocock. 'I'm looking



forward to shaping the sector and the future of the GTR business.'

# EC imposes anti-dumping duties on imports of optical fibre cables from China

The European Commission (EC) has imposed anti-dumping duties ranging between 19.7 per cent and 44 per cent on imports of optical fibre cables from China. The strongly subsidised Chinese optical fibre cable industry has benefitted from an unfair competitive advantage, allowing it to significantly increase exports to the European Union (EU) at heavily undercut prices during recent years.

Philippe Vanhille, executive vice president telecom division at Prysmian Group, commented, 'We welcome the decision and it is reassuring to see that Europe is able to strongly act against unfair practices.



Philippe Vanhille

Fair competition must be ensured in the interest of our customers and stakeholders, to guarantee a sustainable availability of

quality components for the construction of the European optical fibre infrastructure.'

He continued, 'We believe it is fundamental to maintain high quality standards in the optical fibre segment, in order to ensure faster, more stable networks, cost

effective and environmentally friendly installations with lower operating costs and an increased network lifespan. Only by doing this will we be able to guarantee that the integrity of the network infrastructure is secured, stability is increased across all bands and possibilities are opened up for system evolution.'

## CHANNEL UPDATE IN BRIEF

ActiveOps has appointed Jim Kilsby, former IBM vice president, as its regional chair based in Australia.

Freshwave has appointed Tom Bennett as its new chief technology officer (CTO). He will lead a team of over 50 engineers and operations specialists responsible for delivering indoor and outdoor mobile connectivity in environments ranging from railway stations to stadiums and high rises to hospitals.

AFL has opened its new fibre optic cable facility in Swindon, Wiltshire. By investing in cable production in the UK for its European customers, such as Openreach, AFL will help speed up rollouts of full fibre broadband in support of the UK government's target for 85 per cent of UK premises to have access to gigabit broadband by 2025.

Tata Consultancy Services (TCS) has expanded its 18-yearlong strategic partnership with Swiss Re to help it build a more social and open digital workspace leveraging the cloud, to drive greater collaboration and innovation.

Nuvas Group is further accelerating its growth through a second investment this year, by acquiring Belgium based Deltalink.

# A recipe for *success*

Cindy Ryborz of Corning Optical Communications explains how to plan for effective cable management

▶ There is a lot we can do to future proof data centre infrastructures and prepare for unexpected incidents. A key component is cable management, which is essential for the performance of a network. Well organised cabling means easier moves, adds and changes (MACs), bend radius control and troubleshooting in case of issues, particularly when compared to unstructured 'spaghetti' cabling.

## FACING FACTS

Today's data centre networks are faced with constantly growing and changing demands. What seems like more than enough capacity today will most likely not be sufficient for tomorrow. The coronavirus pandemic has, of course, provided a prime example of how suddenly and unexpectedly our networks can be tested and how data centres need to scale.

To give an example, DE-CIX, one of the world's leading internet exchanges, saw a record traffic peak of 9.1Tb/s in March 2020, representing an increase of 800Gb/s. To put this into perspective, imagine the simultaneous transmission of up to 200 million high definition videos. During the US presidential elections in November 2020, the all-time peak rose even higher, to 10Tb/s.

Structured cabling helps to organise and manage cables, allowing better airflow and preventing loose cabling from tangling up, kinking, bending or even breaking optical fibres – all of which have an impact on network performance. Crowded cable trays, pathways or ducts, as well as clusters of loose hanging patch cords in densely populated server racks, may also create hotspots. These can impact the performance of network components or cause them to fail, creating possible delays or downtime.

## STRUCTURING THE NETWORK

The deployment of structured cabling, of course, is not a new concept and data centre environments continue to move away from the practice of patching and connecting equipment from point to point, or as it is installed. A more recent development, which is impacting approaches to structured cabling in large projects, is the growth of massive data centres beyond the confines of a single building or data hall.

These campus environments, with





deploy network technologies, particularly in parallel optic applications. So whether working with duplex, 8-fibre, or 16-fibre transmissions, the MPO connector scales to whatever technology is used – including parallel optic applications such as 400 Gigabit Ethernet – and allows for port breakout applications reducing the total cost of ownership (TCO) of a data centre deployment.

### PROTECTING PERFORMANCE

Managing fibres, cables and patch cords inside rack frames or fibre housings, rather than outside, helps to keep transmission links protected. Ideally, we keep connections short in high density cabling/connectivity solutions.

Fully equipped racks require neat and structured patch cable management, and bend insensitive fibres are here to help in tight spaces or crowded cable trays.

Bend insensitive fibres can exhibit up to a tenfold reduction in loss at the point of the bend when compared to conventional multimode or singlemode fibres, and help to prevent attenuation and loss of signal strength. This protects system margin or power budget headroom and prevents unscheduled downtime during MACs over the lifetime of the infrastructure.

multiple buildings, require a high fibre count cabling infrastructure, which can be a challenge to deploy. There are solutions available to meet such high fibre count requirements. While splicing may be sufficient for ribbon cables of up to 864 fibres, when connectivity requirements are pushing fibre counts to 3,456 and even 6,912 fibres, pre-terminated trunks or pigtailed with multi-fibre connectors are a much better choice.

The multi-fibre push on (MPO) format dramatically reduces the amount of time, effort, and space required to install and

### PUTTING IT TO PRACTICE

Corning worked with a large connectivity provider that needed an infrastructure upgrade. It had installed numerous duplex

zipcords into a basket and because of the large number of connections (and thus cables), there was concern

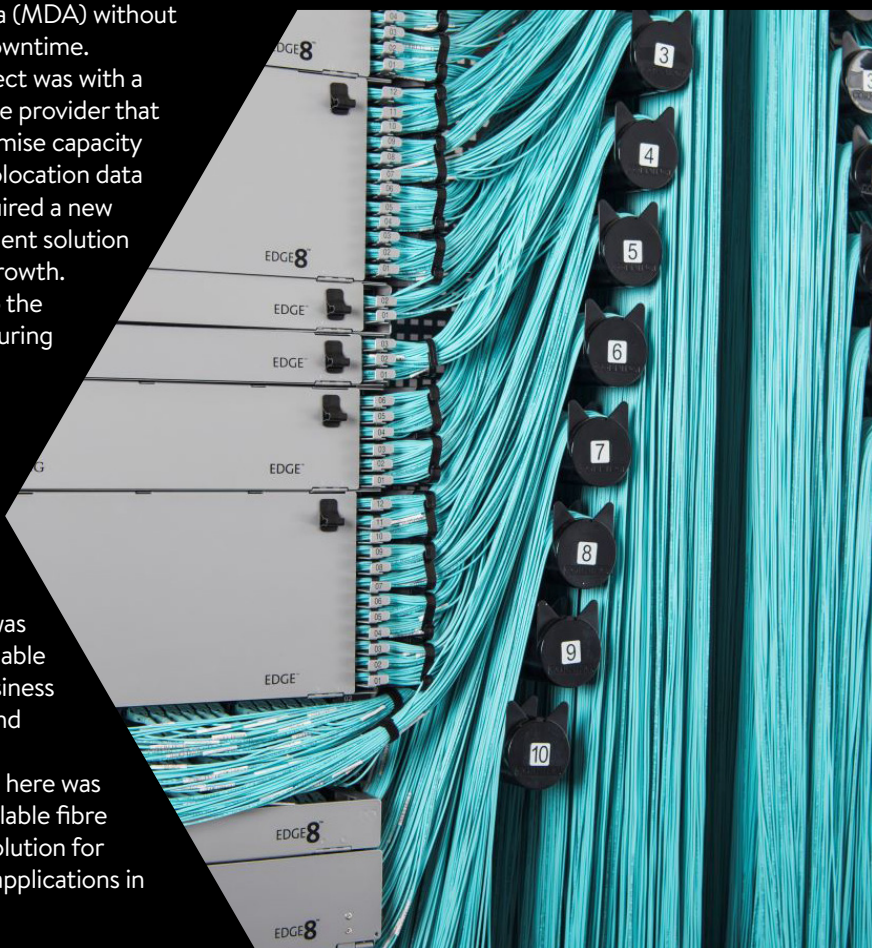
that some of those connections would be compromised and overall reliability would be impacted. The solution, which encompassed high fibre count optical cables, connectors and hardware, hinged upon bend insensitive fibres and ultimately ensured that the network could withstand the MACs that would occur in the main distribution area (MDA) without disruption or downtime.

Another project was with a managed service provider that wanted to maximise capacity at its 9,717m<sup>2</sup> colocation data centre and required a new cable management solution to support its growth. Fundamental to the project was ensuring a high density infrastructure solution by maximising port capacity within a small footprint, and ensuring the infrastructure was flexible and scalable to changing business requirements and future growth.

The approach here was to provide a scalable fibre management solution for cross-connect applications in

**‘Structured cabling helps to organise and manage cables, allowing better airflow and preventing loose cabling from tangling up, kinking, bending or even breaking optical fibres – all of which have an impact on network performance.’**

the data centre’s central hub. A frame design provided optimised routing paths for patch cords, reducing the risk of entanglement, while the operations staff could install or remove a single patch cord in less than two minutes – regardless of the cable route. To further simplify deployment and stock levels, the frame only required



a single length patch cord of just 4m to connect any port to any other port within the frame.

## RISKY BUSINESS

In some scenarios, disorganised cables can pose a genuine safety risk too. Corning worked with a multi-tenant data centre that was looking for a better way to organise its network. In the MDA, many of the patch cords were longer than the required distances, which was not only an eyesore but also had safety implications. MACs were also difficult, requiring too much time to identify connections and increasing the risk of accidental disconnection.

In addition to the previously mentioned frame design that allows for growth and expansion of the network one frame, module or fibre termination at a time, its patch cords were also reorganised. A self-tracking system enabled simplified inventory management and by ordering the specific jumper lengths needed, the company was able to decrease clutter and clean up its interconnection room.

## MEETING THE NEED

As data centres scale and become more complex, the demands for cable management complexities increase. However, the solutions are already in place to meet them. Ultimately, not only is well planned cabling beneficial to the MACs of current customers, but organised cabling also attracts

prospective end users. The ability to confidently give customer tours is a major bonus, particularly for multi-tenant data centre owners that want to find a way to differentiate themselves, and could be the deciding factor between a multi-year contract and lost business. ■



## CINDY RYBORZ

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

## Patch Solutions

Patch Solutions provides a wide range of labelling solutions via our in-house UK workshop, which can label purchased cables before despatch. An on-site labelling service for existing installations is also available.

Working in collaboration with companies including Brady, Cableflag, Panduit and Silver Fox, we are sure to have the right solution for your needs. Simply provide us with your preferred number/character and any barcode sequence and we'll do the rest.

The Cableflag TagPro solution is ideal for Category 5e, Category 6 and Category 6A slim patch cables, as well as duplex optical fibre cable labelling. Once installed, it can

be rotated and moved up or down the cable for greater visibility. It's also an ideal choice for moves, adds and changes, as the tag is fully reuseable.

We also provide engraved adhesive identification labels in an array of different sizes and colour options. These are ideal for data centre rack key fobs, cabinet doors and equipment patching identification.

All solutions are competitively priced and available with a quick turnaround. For more information [CLICK HERE](#) or call our sales team on 01442 890890.

[www.patchsolutions.com](http://www.patchsolutions.com)



## Cable Management Warehouse (CMW)

Available from CMW, the Brady Wraptor A6200 wrap printer applicator prints and applies labels on wires and cables. It processes cable diameters between 1.27mm up to 6.35mm and wraps labels in seven seconds, reducing the print/wrap cycle time by 50 per cent (relative to hand application).

Compact and lightweight, the A6200 increases production with one-step print and apply. It is designed for flexible work environments, providing a lower

investment/unit and provides exceptionally good value when compared to total installed cost when installed by hand.

It can also be easily moved to different

workstations to create more efficient workflows.

The Wraptor A6200 Rewinder allows you to keep your workspace tidy, as it captures used material and neatly stores it with a space saving design.

[CLICK HERE](#) to find out more about the Brady Wraptor A6200 or to send an email [CLICK HERE](#). [www.cmwltd.co.uk](http://www.cmwltd.co.uk)



## Panduit

Panduit's Adjustable Depth 4 Post Rack combines the stability of a cabinet with the accessibility of an open rack to provide maximum flexibility when designing a network layout. Upgrading active equipment in telecommunication rooms and data centres often requires a deeper rack than standard supplied units, which the Panduit 4 Post Rack system provides.



The adjustable depth system allows maximum versatility in a single part number. Additional mounting holes in the posts allow for various accessories to be attached to create greater application

flexibility. It has the capability to adjust the depth of the rack to fit specific network needs and each rack has 39 different depth options, from 584mm-1066mm in 13mm increments.

It can be assembled in minutes and is self-squaring when assembled with the eight different masked grounding locations at all corners. Available in black and white as standard, the Adjustable Depth 4 Post Rack has a UL load capacity of 907kg, offering a highly adaptable rack and cable management system to manage and protect an organisation's network investment.

To find out more **CLICK HERE.**  
[www.panduit.com](http://www.panduit.com)

39

## Inside Networks

2022 CHARITY GOLF DAY 25TH MAY

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

[www.marriottgolf.co.uk/club/hanbury-manor](http://www.marriottgolf.co.uk/club/hanbury-manor)

### Playing the Hanbury Manor PGA Championship Course:

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

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

Live Scoring sponsorship is available.

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

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

Supporting:

**WE ARE  
MACMILLAN.  
CANCER SUPPORT**



Indoor Simulator Competition



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

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

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

Organised by:



Promoted & Supported by:



To book a team or for further information email [info@slice golf.co.uk](mailto:info@slice golf.co.uk) or telephone **077 69 69 69 76**



## Comtec

Comtec, part of the ETC Group, offers a comprehensive range of labelling solutions for asset tracking, data and telecommunications labelling, facility identification, cable labelling and more.

Handheld printers such as the Brady BMP21-PLUS and BMP61 are perfect for telecom and datacom installers.

They produce professional and durable labels in multiple formats on a range of materials to keep cables and components identified in the most demanding industries. The printers



are designed for use in the field, with long battery power and a rugged design, and are drop tested from 2m. Label cassettes simply drop in and, with instant power-on and first label printing, you'll be up and running in no time, with no wasted materials.

**CLICK HERE**

to view the full range of labelling solutions available from Comtec or contact sales on 01480 415000.

[www.comtecdirect.co.uk](http://www.comtecdirect.co.uk)

40

## Rittal

Rittal's VX IT is the world's fastest IT rack. Conceived as a universal and modular variant kit, the solution can be used as a network and server enclosure in a variety of edge applications.

All VX IT variants have been tested and certified with all their components in accordance with international standards such as UL 2416, IEC 60950 and IEC 62368. This means there is no need to additionally certify the finished, configured system.

With VX IT, companies can implement



new infrastructures at unprecedented speed – from a single network rack to a complete edge data centre. Rittal maximises the full digitalisation potential for the benefit of its customers. The entire process from selection, configuration and ordering through to delivery is digitally supported and transparent. During

configuration, a 3D model is assembled piece by piece and the finished 3D model is available for reuse by the user.

**CLICK HERE** to find out more.

[www.rittal.co.uk](http://www.rittal.co.uk)

## Excel Networking Solutions

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

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



– the acrylic sheets are fadeproof and laser technology eliminates the risk of diminishing ink visibility.

The 'made to measure' nature means that Excel can print anything to meet the requirements of the end user including specific destination locations, equipment and company logos –

the options are endless.

For further details and prices on Excel's bespoke laser engraved labelling service call 0121 326 7557, **CLICK HERE** to send an email or to visit the website **CLICK HERE**.

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

# MISSED AN ISSUE?

**CLICK ON THE COVER TO READ MORE**



FOR A FREE SUBSCRIPTION TO **Inside\_Networks** [CLICK HERE](#)

# Tag team

How can labels help avoid downtime, temper rising maintenance costs and create efficient physical asset visibility? **Joseph Bowden** of Brady Corporation and **Ian Bankhurst** of Cable Management Warehouse (CMW) provide the answers

▶ As the world's dependency on digital services increases, their unplanned absence becomes ever more costly. The Uptime Institute reports 47 per cent of its survey respondents calculated their most recent outage cost to be more than \$100 000, with 15 per cent incurring a cost of more than \$1m. The six most expensive outages exceeded a cost of \$25m, as well as disrupted service, lost opportunities and regulatory fines. Along with their dependency on digital services, customers are also increasing compensation demands for downtime via service level agreements (SLAs).

## CAUSE AND EFFECT

Data centre outages are mainly still caused by power problems, network and connectivity issues, and cooling and system errors. In 79 per cent of cases, human error played a role, in either staff execution, process and procedure, or maintenance. The good news is that many outages are avoidable. Reliable cable and component labels can help reduce human error, make maintenance interventions more efficient and save time in physical asset audits.

With more demand for digital services, denser racks and increasing numbers of ports, the amount of cables in a data centre will certainly continue to grow. Accidentally unplugging the wrong cable can set in



motion a devastating cascade of service disruptions. Compared to the Goliath sized costs that these easy to make human errors generate, a reliable, professional label is a highly efficient counter.

## FLYING THE FLAG

Reliable labels also help temper rising maintenance costs by enabling engineers to trace cables quickly and deliver their best work in good time without any side effects. Most data centres use flag labels to identify their copper cables. Flags are an

interesting cable identification solution to maximise space on the label for prints, or to make cable label barcodes and QR codes legible for scanners.

Some flag label formats have adhesive free areas on the label, so that exposed



corners do not stick to surrounding cables, labels or equipment – further increasing intervention accuracy and speed. To identify fibre optic cables, most data centres switch to P or T shaped flags to minimise label adhesive contact with the cable, while creating

sufficient space to print a serial number or other code.

Another solution to enable efficient interventions and minimise downtime risks are rotatable or turnable labels. These labels wrap around a cable and are applied on to themselves. They enable users to rotate the label print into view, meaning less risk of damaging a cable or a connection in the rack.

### NEED FOR SPEED

Identifying bundles of cables further

increases the speed at which professionals can find the cable they need to service. Many data centres already use Velcro One-Wrap to bundle cables together. A highly practical solution to visibly identify these bundles, it is a label that swaps adhesive for a hook grip.

This identification solution can be applied and reapplied endlessly on Velcro wraps. Just like all solutions mentioned previously, it is printable in the data centre, or at any location, with small, portable label printers. With reliable identification on racks, servers and ports, as well as on cables, labels can create a coded data centre blueprint that not only reduces downtime risks but increases staff efficiency, including new hire training speed.

### SAVING TIME

Labelling thousands of cables should not take too much time. Professional label printers exist in flexible portable designs, with high volume benchtop printers and automated print and apply systems that cover a range of needs.

Label printing software can capture data from spreadsheets or enterprise resource planning (ERP) systems, and can order a label printer to create the label required. If your printer is equipped with bidirectional communication features, it can check the label design with its loaded consumable and suggest a swap, if necessary, before printing starts.

If you need to identify sizeable volumes of cables, solutions are available that will not only print a label, but also apply it on to a cable. Automated print and apply will not take more than seven seconds per label, which we estimate to be a timesaving of more than 50 per cent per applied label versus manually printing and applying a label.

‘Professional label printers exist in flexible portable designs, with high volume benchtop printers and automated print and apply systems that cover a range of needs.’

## HOW TO CODE

Now that we have discussed label and printing options, the next question to tackle is what to print on those labels to enable efficient operations and interventions, and to avoid downtime.

The Telecommunications Industry Association (TIA) offers an internationally recognised labelling standard. TIA-606-C enables users to map cables precisely to the floor, telecom room and patch panel position or block position on which they are terminated. The standard is alphanumeric, yet also suggests a label colour code for faster visual recognition.

Any coding system can work, as long as current and future data centre employees understand it. Following an international standard can make labels easier to understand for outside contractors and customers as well. It can also highlight additional professionalism.

## FOLLOWING PROCEDURE

Respondents in the Uptime Institute’s survey indicate that a significant number of human errors that cause downtime originate from a failure to follow procedure. A near field communication (NFC) radio frequency identification (RFID) label, applied on a specific cable or component, could highlight the proper

procedure on an NFC enabled smartphone at the point of need. The procedure can be offered in various steps

a user needs to verify before being enabled to proceed. While not a 100 per cent guarantee, a systematic approach with confirmation at each stage will enable users to follow procedure more easily.

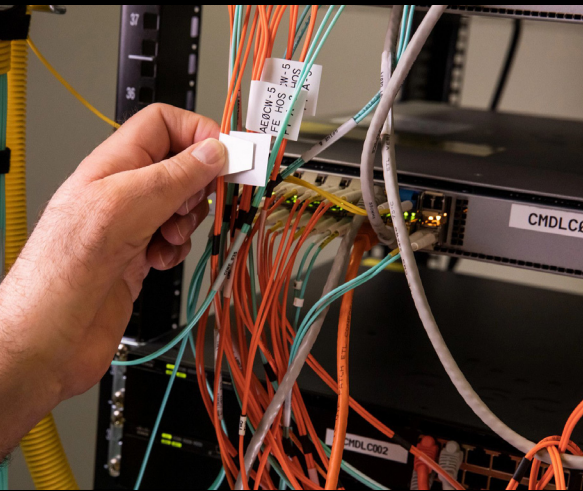
Additionally, professionals can log every maintenance or troubleshooting action with their smartphone on the labelled cable or equipment itself for future reference. This data can be encrypted, and RFID labels can have several access levels that can be linked to user profiles to further improve data centre security.

## THE RIGHT FREQUENCY

Battery free RFID antennas can be included in any label material, resulting in a reliable, programmable and rewritable label that does not require maintenance. Users can read and add data to the label with the latest smartphones from up close and/or from a distance with an RFID scanner. RFID labels are available that emit a legible radio frequency signal, even when applied to metal surfaces in metal rich environments.

A physical equipment audit, in response to customer requirements or governmental regulations, is possible in a couple of clicks with RFID. RFID scanner gates at each server room door can track all RFID labelled items that pass through and enable





automatic updates to centrally stored equipment inventory data. This enables fast

reporting on any specific server room inventory and creates lightning fast visibility on physical assets – whenever a customer requires it.

### THINKING AHEAD

More than any other label, RFID labels can store data that is easily accessible at the point of need. They can help reduce downtime through easy asset identification and by improving compliance with procedures. On top of this, they offer much needed visibility on physical assets. In essence, passive RFID labels provide each labelled item with a reliable, robust and secure digital identity that prepares a facility for the day after tomorrow. ■



#### IAN BANKHURST

Ian Bankhurst is managing director at CMW. He was a sales and project engineer before forming Dacom Electronics in 1993. Through a sequence of mergers and acquisitions, Bankhurst now runs CMW, a distributor of cabling containment in the UK, which is based in both Bedford and Farnborough.



#### JOSEPH BOWDEN

Joseph Bowden is business development manager United Kingdom & Ireland - product and wire identification platforms at Brady Corporation. He works with some of the largest companies in the industry to help create more efficient, user friendly identification solutions that support customer requirements.

# Quick clicks

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

7 Myths About DCIM You Need to Know As An I&O Leader is a blog by **RiT Tech**. [CLICK HERE](#) to read it.

The State of Data Center Infrastructure Management in the New Normal is a white paper by **Sunbird Software** that explains top trends and best practices for modern data centre management. [CLICK HERE](#) to download a copy.

Guidelines For Providing Structured Cabling to Wireless Access Points is a white paper from **Excel Networking Solutions**. [CLICK HERE](#) to download a copy.

46



FOR A FREE  
SUBSCRIPTION TO  
**Inside\_Networks**  
[CLICK HERE](#)

**Equinix** has released its Global Interconnection Index (GXI Vol 5), an annual report of industry research that forecasts how organisations are using interconnection bandwidth and distributed infrastructure to shape and scale the global digital economy.

**CLICK HERE** to download a copy.

Edge Archetypes 2.0: Deployment-Ready Edge Infrastructure Models is a report from **Vertiv** that identifies edge infrastructure models to help organisations move toward a more standardised approach to edge computing deployments. **CLICK HERE** to read it.

Data Centers and Decarbonization: Unlocking Flexibility in Europe's Data Centers is a new study by **BloombergNEF** in partnership with **Eaton** and **Statkraft**. To find out more **CLICK HERE**.

**Keysource** has published its 2021 State of the Industry Report, which is designed to give an insight into the decisions and considerations that IT directors and senior decision makers in the data centre industry are making. **CLICK HERE** to obtain a copy.





# Thought *process*

Cindy Montstream of Legrand identifies the key considerations when selecting connectivity solutions

▶ Data networks are now IP networks, so selecting connectivity requires much more thought and consideration than ever before. The RJ-45 has become the universal ubiquitous copper connector for data and the equipment and application typically drive the selection of the optical fibre connector. No longer is just the category of performance sufficient to select a copper connector, nor are the simple decisions between duplex or parallel optics and singlemode or multimode sufficient for selecting a fibre connector.

## DEEP IMPACT

We need to think about networks differently. The internet of things (IoT) and power over Ethernet (PoE) are two technologies impacting connectivity considerations. Many IoT devices will connect wirelessly, however, a good cabling infrastructure is needed to support these applications. With IoT applications continually emerging, connectivity could be located almost anywhere.

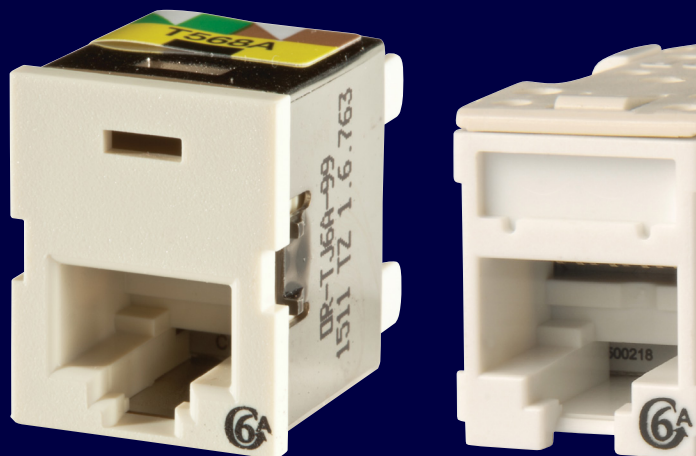
IP networks support many different types of devices and equipment. More and more devices are powered over twisted pair cable

using PoE. A manufacturer's RJ-45 may not be designed to support high power PoE, even though it meets the standards' performance requirements.

Are field terminated copper plugs a good option? With new IoT devices connectivity may be physically located in many different places – not just the faceplate on the wall, surface mount box or on furniture from one of several main manufacturers. IoT was a catalyst for standards bodies that are currently developing standards for 2-pair Ethernet, which will use a new copper connector. We are also on the cusp of new fibre connector and connection options.

## COPPER CONNECTIVITY

Selecting copper connectivity should



now include thought about whether the copper cabling will be carrying power along with a data signal. There are additional requirements needed to support high power and the location of the connectivity is also a major consideration. As IoT applications continue to emerge, connectivity is being placed in many non-traditional locations.

If the cabling is supporting PoE, the copper connectivity must be designed to support it. The current standard (IEC 60512-99) recommends designing copper connectors to support 1A on each circuit path. This is fine for a data network that is low voltage and has limited current.

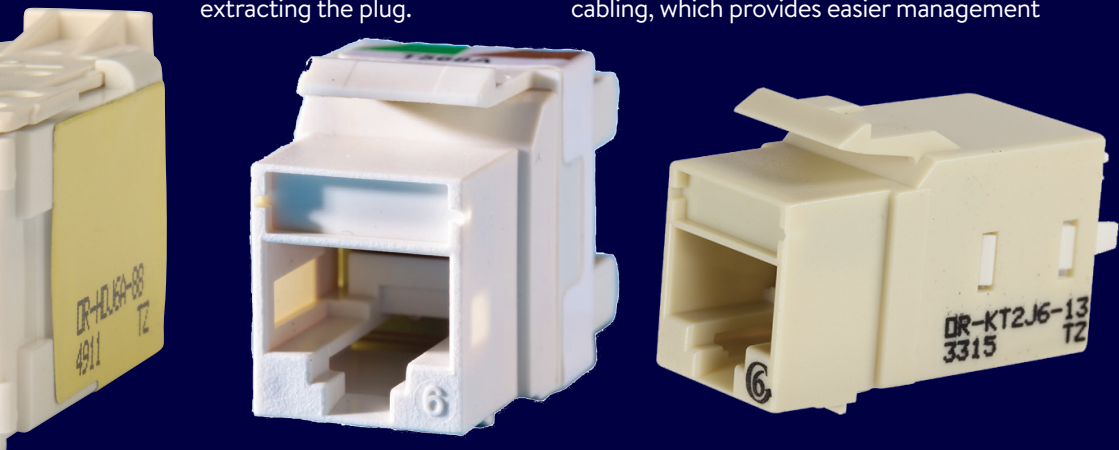
High power PoE (IEEE802.3bt) can have a maximum current draw of 960mA. That is almost the maximum value connectors are designed to support. If the cabling might support power, plan for the worst case and select connectivity designed to support more than 1A of current – at least 1.5A. Another concern with supporting PoE is the spark gap concern when un-mating under a PoE load. Connectivity should be designed to locate the last point of contact away from the fully mated connection area to protect it from arch damage when extracting the plug.

## BEST PRACTICE

Mechanical characteristics are important because they have an impact on installation. Is it better to have a jack that is front loading or rear loading? Selections impact the ease of installation – a front loading jack may be easier to install and maintain if it is in a difficult to reach location. However, if there is not proper space for the cable slack larger cables, like Category 6A UTP, can cause the jack to pop out of a faceplate or surface mount box if the cable creates too much pressure on it. A rear loading jack is more robust in this case.

Some manufacturers offer bezels that allow the same jack to be front or rear loading. Do you want a 110-type or crimp-type (lacing cap) termination? 110-style termination has been around the longest but might be more difficult to use with large cables. Do you want a keystone footprint? Even though there is a keystone standard, there is a large enough tolerance that different keystone products may not work together. Ask the question.

The field terminated plug has become popular with IoT devices. The standards recognise use for certain applications but not as a replacement for structured cabling, which provides easier management





| Connector | Density in 1 RU (rack unit)   | Comparison  |
|-----------|-------------------------------|---|
| LC        | 72-duplex ports / 144 fibres  | Highest density available today                   |
| CS        | 168-duplex ports / 336-fibres | More than 2x LC density                           |
| SN        | 192-duplex ports / 384-fibres | Higher density than CS                            |
| MDC       | 216-ports / 432-fibres        | Highest density; 3x LC density; polarity reversal |

were other fibre connectors in both the first generation and SFF footprint, however, the ones mentioned have become the most common in data networks.

Data centre growth and transceiver design that requires a duplex optical connector with a smaller footprint than the LC are driving a third generation of duplex

connectivity – very small form factor (VSFF) optical fibre connectors. These new VSFF connectors include the CS, SN and MDC. All are a push-pull style to make insertion and extraction easier. The CS was developed as a replacement for the LC connector, enabling higher density, while the SN fibre connector provides increased density over the CS and enables breakout at the transceiver. The MDC connector supports the highest density of the three, supports breakout at the transceiver and enables simple polarity reversal in the field.

‘Data centre growth requires a duplex connector with a smaller footprint than the LC are driving a third generation of duplex connectors – very small form factor (VSFF) optical connectors.’

for moves, adds and changes. Make sure field termination is done by someone experienced – I have seen multiple plugs, terminated by the same person, that have very different performance values.

### FIBRE CONNECTIVITY

There have been a couple of evolutions in fibre connectivity. In the first were SC and the ST connectors, while in the next generation, providing higher density, were small form factor (SFF) duplex connectors – this was our introduction to the LC connector. The MPO came later for supporting parallel transmission. There

## NEW AND IMPROVED

Along with these new VSFF connectors, new ways to break out parallel to duplex transmission are becoming available. Traditionally, breakout from a higher to a lower data rate was done with a cassette or a harness – cassettes make management easier but add two connections to the channel, while harnesses only add one connection and are more difficult to manage than patch cords. New solutions on the market are providing options that offer the advantages of the cassette and harness in one – breakout to patch cords for easy management with only one connection added.

The example shown on the left breaks out an 8-fibre trunk to four MDC

connectors. This provides very high density with only one connection in the channel. Yes, you can have your cake and eat it too! Use of the MDC connector makes polarity easily reversible without the need for special tools. Polarity can be changed for both multimode and singlemode, which is usually not possible because of the angled polish. Historically, equipment has driven the adoption of new connectors but with new breakout options

both connectivity and the equipment manufacturers will drive market adoption.

## THE RIGHT CHOICE

Knowing the right questions to ask is the key. Technology is always evolving, inspiring new ideas and ways to do things. Keeping up with changes can be challenging and time consuming. You don't need to know

every option available – you just need to ask the right questions to select the best connectivity for your application. Nothing is future proof but making the right connectivity decisions lengthens the life of structured cabling through several generations of equipment. ■



### CINDY MONTSTREAM

Cindy Montstream is director of technology support and training at the Data, Power & Control Division of Legrand, North & Central America. Montstream has over 30 years of teaching technical subjects and working in the telecommunications industry. She is a BICSI Registered Communications Distribution Designer (RCDD) and Network Transport Specialist (NTS), and currently participates on the Telecommunications Industry Association (TIA) TR-42 subcommittees, holding the chair position on the TR-42.3 committee.

growth and design that complex optical with a smaller in the LC are generation connectivity form factor al fibre

## Siemon

Siemon's LC BladePatch duplex fibre optic jumper provides a unique solution for high density data centre patching environments. The space saving, one piece UniClick housing offers unmatched accessibility and simplifies jumper installation and patching administration in even the tightest, side stacked server, switch and storage area network (SAN) port configurations. A patented push-pull design allows connectors to be securely engaged and removed via a finger grip on the end of the strain relief boot.



with no loose parts. To further simplify jumper installation and future patching field management, LC BladePatch jumpers feature reduced diameter unitube cable and bend insensitive glass fibre. This space saving, flexible cable reduces cable pathway congestion for improved airflow, energy efficiency and simplified cable routing.

The LC BladePatch provides low loss performance for multimode and singlemode

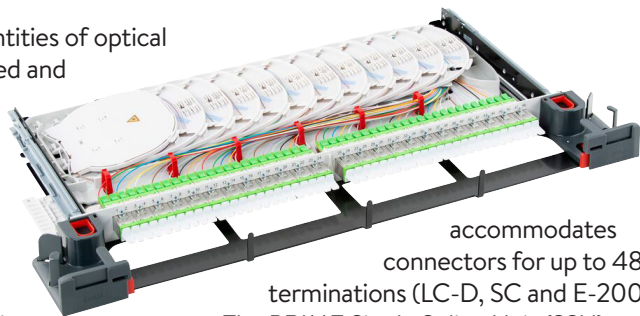
cabling, supporting the precise optical performance requirements for high speed networks and improving performance.

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

## R&M

In the last mile, large quantities of optical fibre need to be connected and managed – often in cramped spaces. To provide a solution, R&M is expanding its PRIME family with two modules for single fibre management on network Level 3. The new distribution modules provide as many fibres as possible for subscribers in a PRIME rack and administration is made easier by crossover free fibre routing. Two and four-fibre fibre to the home (FTTH) network connections are supported.

The PRIME Single Termination Unit (STU)



accommodates connectors for up to 48 terminations (LC-D, SC and E-2000). The PRIME Single Splice Unit (SSU) connects 48 fibres per splice, while the subracks can be retrofitted into existing 1U or 3U subracks. The modular concept also includes compact FMTS tool-free, indexed splice trays for fibre management.

For further information [CLICK HERE](#).  
[rdm.com](http://rdm.com)

## EDP Europe

EDP Europe is a stockholding distributor for the advanced optical fibre connectivity solutions from Huber+Suhner. Ultra-flexible pre-terminated MTP trunk cables that utilise US Conec MTP Pro connectors are now available off the shelf.

Providing greater flexibility than standard MTP connector technology, MTP Pro enables quick and effective polarity and gender reconfiguration in the field – lowering expenditure by reducing the number of cables needed to be kept on hand. Used in SR4 40Gb/s and 100Gb/s networking, the MTP Pro connector is designed to reduce the risk of



damage to ferrules with a longer insertion and extraction sleeve that relieves strain on the cable, making connector mating much easier and safer.

These can be coupled with the Huber+Suhner IANOS system including MTP transition modules for a fast, flexible and modular solution that future proofs fibre networks – providing a quick, simple and inevitable upgrade path from 10Gb/s to 100Gb/s and beyond. IANOS provides best in class density, speed of installation, handling and scalability.

[CLICK HERE](#) to find out more, call our sales team on 01376 501337 or [CLICK HERE](#) to send us an email. [www.edpeurope.com](http://www.edpeurope.com)

## HellermannTyton

As part of the new Category 6A product range from HellermannTyton, the Cat6A field terminated plug delivers flexibility, speed and ease for your on-site network installations.

The Cat6A field terminated plug has been designed to support today's network infrastructure requirements including Gigabit Ethernet, voice over IP and power over Ethernet (PoE) applications. The HTC Series Category 6A system uses 360° shielding to prevent alien crosstalk and helps to dissipate the heat produced by PoE applications. The tool-free design allows for fast on-site



installation without the need for any specialised termination tools.

HellermannTyton also recently launched its new Cat6A jack along with a brand new 1U 24 port modular patch panel, which has been designed for fast and easy installation and features a folding rear cable manager bar, removing the need for additional tools during install. Both products come in 100 per cent recyclable packaging to reduce any environmental impact from waste materials.

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

# Rising to the challenge

Michiel Panders and Andreas Rüsseler of R&M share some insights into current and upcoming developments in connectivity

▶ Changing user behaviours and requirements, along with the proliferation of 5G, Wi-Fi 6 and other technologies, have marked consequences for cabling and connectivity. An important overall trend with regard to cabling is the introduction of remote power categories in the EN 50174 series of installation standards. These categories define the capability of an installation to support

different types of power over Ethernet (PoE). Individual channels that meet EN50173-1, using connectivity according to IEC 60512-99-2, support 4PPoE with 90W, the highest level of PoE. However, meticulous planning and installation are required, for example, bundling multiple channels together in a cable tray may lead to overheating problems.

54



## MODERN AGE

Data centre infrastructure management (DCIM) software and inventory management are becoming increasingly important in keeping track of infrastructure and ensuring that whenever something is switched on it works as intended right from the start. In today's increasingly complex environments, installation managers have to be absolutely sure each port is connected exactly in the way they assume it is connected. This prevents security issues and ensures compliance with relevant standards. Accurate knowledge of available infrastructure and the ability to demonstrate interconnections is also essential for compliance and audits.

To modernise, data centres require visibility and inventory creation using systems that can clarify exactly how infrastructure is connected and managed. Planning up to five years ahead in terms of space and bandwidth requirements, as well as central processing unit (CPU) and network capacity, is also wise, as is planning for servers transitioning from 25Gb/s to 100Gb/s to 400Gb/s. Once you've implemented a system that helps keep track of automation, workflow management and patching can be planned more effectively.

## THE REAL THING

To detect errors in the network quickly and to minimise downtime, automated infrastructure management (AIM) and DCIM systems are increasingly used for automatic network documentation. Ideally, automated documentation systems recognise and document changes to the network in real time.

When it comes to moves, adds and changes (MACs), human error and poor record keeping are the main causes

of issues. The more you automate, the easier, faster and more fault tolerant your work becomes. If you can optimise MAC processes and records, you can improve availability, uptime and expand in a modular way.

Automated workflows can guide technical staff through processes and make MACs easier. This is especially practical for edge data centres in remote areas, where trained staff might not be available immediately. Automation can also support smaller data centres that don't have a separate IT manager, infrastructure manager and/or facilities manager.

## INCREASING COMPLEXITY

Looking at developments in telco/FTTX, we see regional variations in legislation, (legacy) technologies, requirements and solutions that introduce significant complexity for providers. New tech solutions need to be localised, which requires manufacturer and installer support.

Mobile operators are also seeing complexity increase as they roll out 5G, which requires significantly greater optical fibre density, fibre close to antenna towers and an increasing number of access points. Due to the reduced range of high bit rate antenna signals, more antenna locations are necessary – five times as many as is the case with 4G/3G antennas. The considerable bandwidth requirements of each individual antenna add up and must be supplied and discharged via a high performance network. This is only possible with a fibre connection to the antenna.

## UP CLOSE

The transmission to the backbone network is also done by means of fibre. If fibre density in the access area is too low, connecting and operating macro and small



cell antennas can be difficult or impossible. The antennas will not be capable of handling vast data traffic volumes fast enough without a dense optical fibre backhaul network. Connecting 5G base stations using

radio links will no longer suffice – antennas must be integrated into fibre networks and connected to edge data centres.

5G's bandwidth and latency potential can only be realised by bringing FTTX networks closer to a wireless connection point. Data and power cabling and equipment needs to be housed in ever-smaller cell sites and the resulting demand for larger fibre counts also introduces high quality requirements.

### VITAL INSIGHTS

In the office/LAN space, the convergence trend continues – market segments are merging, technology is developing and

**‘Market segments are merging, technology is developing and separation between previously disparate networks is disappearing. Bringing resources on to a common IP platform allows to truly leverage the combined intelligence of systems.’**

separation between previously disparate networks is disappearing. Bringing resources on to a common IP platform allows users to truly leverage the combined

intelligence of systems.

Convergence of building infrastructure such as air conditioning, alarm systems, lighting, LAN, access control and heating is taking place. Integration between building management and network infrastructure is key to efficiency and sustainability, and vital insight can be enabled and improved using a common language between systems.

People are increasingly used to the speed and convenience of cloud based application and processes, which require high speed, availability and low latency. As a result, new on-premise business support applications are expected to be available much faster

and communications infrastructure needs to support this.

### PIECES OF EIGHT

Fibre and Category 8 copper cabling are being adopted to support bandwidth requirements of new Wi-Fi standards over the lengths required to support end points in the building. Furthermore, the growing number of smart devices means



more networked devices and an increased need for high quality cabling in the building environment.

To enable smart devices, it is not necessary to use all eight wires in a cable. Using Single Pair Ethernet (SPE) means less physical cable needs to be routed into areas where other cables might be too thick. As is the case in production plants, traditional power line communication (PLC) technologies are moving to IP and SPE is much more suited to wiring these systems than traditional eight wire category cabling.

## SUPPORT STRUCTURE

SPE, with its two-wire technology (single twisted pair), compact connector dimensions and connector density, relatively large ranges from 15m-1000m (depending on the transmission capacity) and power over data line capabilities, will support all over IP concepts. Making building automation more compatible with Ethernet, with SPE as the connector interface, will support amalgamation of conventional data network technology and building automation. ■



### MICHEL PANDERS

Michiel Panders is R&M's general manager for the European region, excluding Germany, Austria and Switzerland. His background is mainly in IT, spanning various disciplines, with an emphasis on enterprise networking and the telecommunications space. He studied electrical engineering and started working as a project engineer and later as an engineering manager. He spent 15 years at Cisco and joined R&M three years ago.



### ANDREAS RÜSSELER

Andreas Rüsseler has been chief marketing officer at R&M since 2012. He studied communications engineering at the University of Emden, Germany, and Master of Advanced Studies in Business Administration and Engineering at the University of St. Gallen, Switzerland. He has a long history in fibre optics and communications, and worked for Deutsche Telekom, Quante AG, 3M and Huber+Suhner before joining R&M.

## Sudlows completes data centre design and build project at Ashton Old Baths

Sudlows has completed a project in the rejuvenated Grade II listed Ashton Old Baths in Greater Manchester on behalf of Tameside Metropolitan Borough Council. A modular Tier III data centre was constructed to support 36 cabinets at 2.5kW each with two independent UPS systems, an environmentally friendly gaseous fire suppression system and cooling systems.

Sudlows also installed a video surveillance and access control system to keep the facility secure.

The Ashton Old Baths data centre is



a unique facility that will provide digital infrastructure to the area and help local businesses to grow. The data centre is to be utilised mainly by Tameside Council and its partners, as well as the local NHS community, with some space offered commercially to new businesses and start-ups.

Sudlows has also been awarded a 10-year facilities management service contract for maintaining the facility and prolonging the

lifespan of its equipment. The company has a dedicated team supporting Tameside Council, located locally and able to provide both a flexible and rapid response service.

## Custodian Data Centres unveils plans to build 10MW facility

Custodian Data Centres has announced plans to build a new 10MW carrier neutral data centre in Dartford, Kent. Due to open in Q2 2022, the facility, named DA2, is being built to support customer growth as Custodian Data Centres' award winning 2MW ME14 Maidstone facility near full capacity.



Once operational, the site will have a Power Usage Effectiveness (PUE) rating of below 1.3 and be powered by resilient 100 per cent dual diverse renewable energy feeds. The design will remain in keeping with its energy efficient ME14 facility,

which uses five times less energy per kW of IT load than the average data centre. It will incorporate a chilled water cooling system alongside hot and cold aisle containment

solutions to optimise IT temperatures within the white space.

The DA2 data centre has been designed to exceed Tier III standards and, once completed, will be ISO 27001 accredited, PCI DSS and Cyber Essentials

Plus certified – creating a highly secure home for managed service and internet service providers (ISPs) looking to scale. It has also been designed to host the critical IT requirements of cloud, enterprise and public sector organisations.

# AWS cloud support from Tech Amigos underpins growth for Ground Truth Intelligence

Ground Truth Intelligence (GTI) recently sought help from Tech Amigos to transform its existing IT infrastructure and scale its platform in line with changing business needs. The organisation's transition from start-up to scale-up meant its underlying IT infrastructure had to evolve to meet new consumer demands. AWS cloud support from Tech Amigos ensured the core platform had this necessary scalability, flexibility and resilience.

Tech Amigos worked closely with GTI to

bolster the organisation's existing IT infrastructure, prioritise areas for ongoing improvement and promote a DevOps culture throughout the business. This enables developers to focus on what matters most to them. The platform also delivers maximum security standards and data privacy, without comprising on cost or quality. Appointing Tech Amigos to manage its cloud operations and bolster security levels has meant that GTI continues to deliver on this promise.

## PROJECTS & CONTRACTS IN BRIEF

Novant Health in North Carolina is the first enterprise customer to publicly announce the deployment of an enterprise grade Wi-Fi 6E solution. The investment in the Extreme AP4000 access point (AP) solution will allow Novant Health to deliver high speed Wi-Fi throughout its facilities and enable secure, dedicated connectivity for mission critical healthcare applications and medical devices.

Secure IT Environments has been awarded a contract to upgrade the air conditioning units at a Royal Free London NHS Foundation Trust data centre. The new contract will form part of an investment and upgrade programme, and will bring about substantial energy efficiency improvements. Four GEA 18D Multi-Denco down flow close control direct expansion air handling systems and four Denco ambient air cooled condensers will be installed.

CityFibre has made its millionth home ready for service in its nationwide full fibre rollout.

Tata Consultancy Services has joined Jaguar Racing as title partner ahead of the 2021/22 ABB FIA Formula E World Championship. The team will be known as Jaguar TCS Racing.

By migrating its legacy IT infrastructure to Nutanix Enterprise Cloud, George Best Belfast City Airport has been able to halve IT operational costs in its data centre, as well as enhance performance, security and availability to cope with rapidly escalating business demand.

Vodafone Business and Microsoft have announced a five year strategic relationship to support small and medium sized enterprises across Europe on their digital transformation journeys. They will deliver end to end cloud based services that will leverage 5G, edge computing and internet of things (IoT) capabilities to support growth and deliver innovative tools for hybrid work.

# Made to measure

Malcolm Howe of Cundall questions whether Power Usage Effectiveness (PUE) is a competent metric for a sustainable future

▶ For the data centre industry, sustainability and net zero emissions targets have never been more important. However, achieving these will require a paradigm shift in how we approach data centre design. Firstly, we need to reconsider how we typically benchmark data centre efficiency and, secondly, we need to look at data centre cooling.

## ENERGY FLASH

PUE has become a globally recognised metric for reporting the energy use efficiency of a data centre. It provides the ratio between total facility power and power consumed by the IT load. In an ideal scenario, PUE would be 1, with 100 per cent of the power delivered to a facility going to the IT equipment. Hence, PUE aims to demonstrate the energy that is consumed by data centre infrastructure – power and cooling – whilst provisioning compute power to the IT equipment.

Specific to each individual data centre, PUE is not a reliable platform for comparing one facility to another. Neither does it give a good indication of environmental performance. Rather, PUE provides trend data whereby efficiency improvements at a particular site can be monitored for their relative effectiveness. However, in the drive towards achieving sustainable operation, the industry must

adopt a more precise measure of energy efficiency.

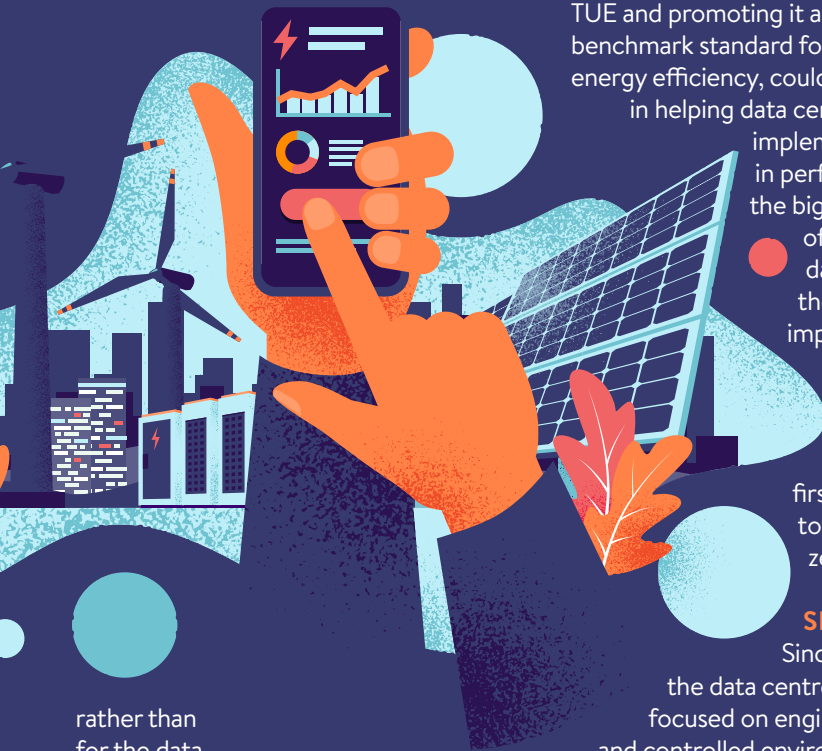
Additionally, IT equipment is a broad church and there are questions about how power delivered to it is consumed. While the larger proportion of IT power is generally consumed by central processing units (CPUs) and graphics processing units (GPUs), a significant amount is also used by onboard fans. There is a strong argument that this fan power use should lie on the facility power side of the PUE equation, as it effectively contributes to the cooling of IT equipment.

## BIGGER PICTURE

To accurately assess the overall efficiency of an entire facility, it is therefore a fundamental requirement that energy usage should be measured at server level, rather than rack level. PUE considers only the power delivered to the rack, rather than the use to which that power is put. However, 10 years ago, Michael Patterson of Intel and the Energy Efficiency HPC Working Group proposed two alternative metrics – IT Power Usage Effectiveness (ITUE) and Total Power Usage Effectiveness (TUE).

The purpose of ITUE is to gauge power usage efficiency for the IT equipment,





rather than for the data centre. Hence, ITUE accounts for the impact of rack level ancillary components such as server cooling fans, power supply units and voltage regulators, which can consume a significant proportion of the energy supplied.

### BEST PRACTICE

ITUE also has its shortcomings, in that power demands external to the rack are not considered. This can be addressed by combining ITUE with PUE to obtain TUE. TUE is obtained by multiplying ITUE (a server specific value) with PUE (a data centre infrastructure value). Although TUE is more specific, it has been ignored by a large percentage of the industry.

Whilst the debate continues about new metrics, raising awareness of

TUE and promoting it as an industry benchmark standard for data centre energy efficiency, could be very valuable in helping data centre operators implement improvements in performance. Since the biggest single use of energy in any data centre is the IT equipment, implementing solutions that yield improvements at rack level must be among the first steps to be taken towards achieving net zero carbon targets.

### SHARP FOCUS

Since inception, the data centre industry has focused on engineering secure and controlled environments within the technical space. Over time, the traditional, air cooling, chiller and computer room air handler (CRAH) approach has been augmented by new methods including direct economisation and indirect air cooling and evaporation. Different containment systems have been devised and the ASHRAE TC 9.9 thermal guidelines have been broadened. All these measures have driven incremental improvements in data centre energy efficiency.

The challenge ahead, however, is twofold. Firstly, how can the energy efficiency of air cooling be further improved to any significant degree? Deltas can be widened and supply temperatures and humidity bands marginally increased. Secondly, the rise in rack power means that air cooling is not an effective strategy for removing heat

from the technical space. The amount of air needed to dissipate heat from high density loads is creating challenges.

Air cooling is simply becoming outdated by the changing demands of the hardware that it serves. Higher power densities are compelling IT leaders to innovate. Hyperscalers and internet giants are already advanced in their experimentation with immersion liquid cooled servers and are reaping the benefits of increased energy efficiency.

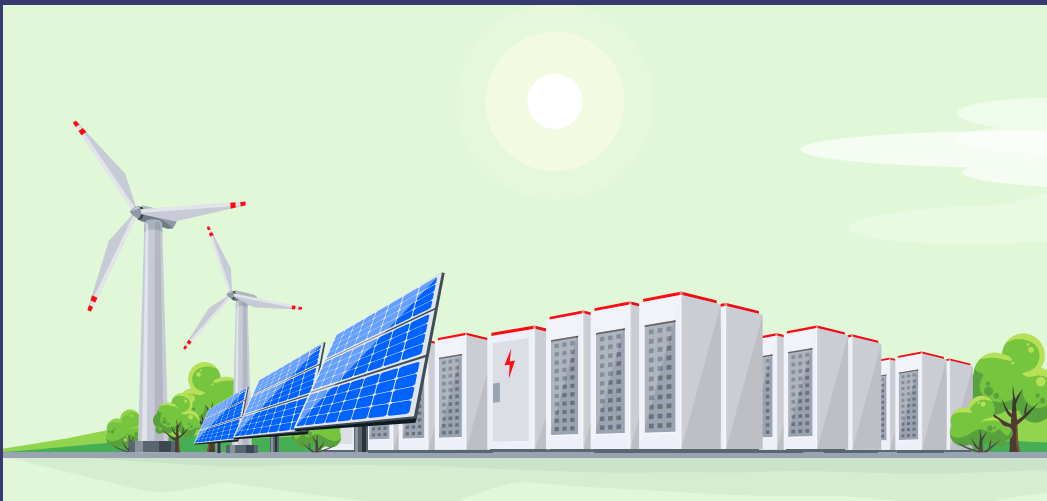
### DRILLING DOWN

The level of granularity provided by TUE gives a better understanding of what is taking place inside both the facility and the rack. It specifically highlights an important attribute of the precision immersion cooling architecture, namely the comparatively small proportion of server power that is required for parasitic loads such as server fans.

‘Whilst the debate continues about new metrics, raising awareness of TUE and promoting it as an industry benchmark standard for data centre energy efficiency, could be very valuable in helping data centre operators implement improvements in performance.’

For example, in a conventional 7kW air cooled rack, as much as 10 per cent of the power delivered to the IT equipment is consumed by the server and power supply unit (PSU) cooling fans. Additionally, some data centre operators positively pressurise the cold aisle to assist the server fans and achieve more effective airflow through the rack. By comparison, the pumps that circulate dielectric fluid within a precision immersion liquid cooled chassis draw substantially less power.

The heat removal properties of dielectric fluids are of an order magnitude greater than air, and the amount of power needed to circulate enough fluid to dissipate the



heat from the electronic components is far less than that needed to maintain airflow across an air cooled server of equivalent power. Furthermore, the comparatively higher operating temperatures of many facility water systems (>45° for ASHRAE Cooling Class W5) that serve liquid cooled installations is such that reliance upon energy intensive chiller plant may be reduced or avoided altogether.

### LIQUID ASSET

By adopting liquid cooling, operators can potentially drive-up efficiencies at all levels in the system, achieving energy efficiency improvements. Increasing rack power density without the constraints of increased cooling air movement would also allow for more compact data centres.

Driven by climate change, there is an urgent need to adopt both better energy efficiency metrics and cooling solutions, as well as to challenge hardware design practices. Once hardware manufacturers start optimising equipment for liquid cooled environments, there is the potential for significant additional rack space and

power utilisation,- as well as sustainability gains. Adapting existing air cooled facilities to support liquid cooled racks could prolong their useful working life.

### GREEN THINKING

While some transitions, such as new metrics and optimised server designs, will take time, there is no doubt about the efficacy of liquid cooling. Initiating the transition to liquid cooling now will start the process of reducing the environmental impact of compute services sooner. ■



### MALCOLM HOWE

Malcolm Howe is a partner at Cundall and leads the global critical systems team, which specialises in the design of data centres and other mission critical facilities. In recent years he has focused on the design of data centres and has a particular interest in energy efficient cooling solutions for data centre applications. In this context, he has been involved in research into the effectiveness of free cooling strategies and the impact of cooling system failure.





## Centiel

Centiel's vision is to eliminate all power quality problems. Ensuring a supply of continuous electrical power is vital in critical environments such as hospitals, data centres and commercial institutions where even the shortest interruption can cause significant financial losses or even endanger lives.

The main purpose of an uninterruptible power supply (UPS) is to protect critical loads from power disturbances. The delicate equipment used in data centres, medical facilities and laboratories, for example, needs perfect power all the time, which is why very high quality UPS solutions are required.

Centiel's response is to focus on technical excellence, which has resulted in the creation of CumulusPower – a fourth generation truly modular UPS solution known for its industry leading 99.9999999 per cent (nine-nines) availability, high levels of efficiency and reduced total cost of ownership. This is achieved through Centiel's unique Distributed Active-Redundant Architecture (DARA), which increases system intelligence and resilience and, as a result, system availability.

centiel  
continuous power availability



CumulusPower also maximises efficiency in a reduced footprint. Flexible frame sizes and module ratings enable facilities to pay as they grow. The high quality of components used ensures that CumulusPower modules are also so robust that they can be redeployed as necessary if an organisation moves, or requires a UPS module at a different location.

System availability is further increased by Centiel's Triple Mode communications bus – a patented technology that improves system availability even further by increasing the speed and resilience of the UPS' internal communication infrastructure. It's just another example of where Centiel has worked to remove single points of failure to increase availability even further and provide the highest quality solution.

As a company, Centiel is not just a technology leader. It also provides premium quality support and maintenance through a team of highly trained and experienced engineers. In the UK, this includes rapid response and 24-hour callout contracts, as required, to suit individual customers.

For more information

**CLICK HERE.**

[www.centiel.co.uk](http://www.centiel.co.uk)

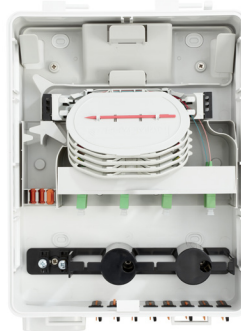


## Prysmian Group

Prysmian Group has launched its Flexibox range of enclosures for internal and external fibre to the home (FTTH) and fibre to the antenna (FTTA) applications.

For FTTH applications, Flexibox is available for the termination of fibre in various combinations including splice only, pre-terminated fibre, and splice and patch versions. Each configuration is designed to enable the unit's fast deployment through easy customer installation and connection.

For FTTA applications, Flexibox is available in a variety of configurations including fibre only, power and hybrid fibre/power to enable the termination of hybrid cables faster and more cost effectively. The



fibre/power hybrid box has been designed to enable the termination of Prysmian's FTTA hybrid fibre and 48V DC power cables, to ensure the efficient delivery of power and fibre to remote radio heads. The single termination process reduces installation time and cost.

In addition, Flexibox can be used as a power or fibre primary distribution point to enable up to 10 drops to antennas for connection with fibre and power utilising DIN rail-mounted products. Flexibox is also available with external

IP ratings.

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

## NetAlly

NetAlly has announced the availability of AirMapper InSites for automated analysis and visual troubleshooting of Wi-Fi networks. InSites continues NetAlly's mission of simplifying Wi-Fi site surveying for everyone by automating the analysis of coverage, signal to noise ratio (SNR), interference, beacon overhead and more.

A simple pass/fail dashboard of survey results eliminates the need for specialised expertise and time consuming manual evaluation. With InSites, AirMapper measurements are automatically graded against configurable thresholds and it



allows users to directly view the specific heatmap to quickly identify trouble areas.

With AirMapper, users of NetAlly's EtherScope nXG and AirCheck G2 instruments can quickly gather location based Wi-Fi measurements and create visual heatmaps of key performance metrics in the free Link-Live Cloud Service. Ideal for quick site surveys for new deployments, validating changes, visual troubleshooting and fast performance verification, NetAlly is the first to provide a complete site survey and wired/wireless analysis solution in a handheld instrument.

To find out more [CLICK HERE](http://www.netally.com).  
[www.netally.com](http://www.netally.com)

# All you need to know

Inside\_Networks

THE NETWORK INFRASTRUCTURE E-MAGAZINE [WWW.INSIDENETWORKS.CO.UK](http://WWW.INSIDENETWORKS.CO.UK)

**MEDIA KIT 22**



CLICK ON THE COVER TO VIEW THE **2022 MEDIA KIT**

# Best of both worlds

Sachin Deshpande of Tech Amigos discusses the benefits of a hybrid cloud strategy

▶ In the information age, modern organisations have always relied on a digital infrastructure to support their wider businesses. Fundamentally, for those looking to remain competitive in an increasingly digitalised economy, investment in this infrastructure is non-negotiable.

## SINK OR SWIM

At no other point in time has there been

services are a key facilitator in ensuring organisations can remain operational, even in the most challenging circumstances. For many businesses across a range of industries, turning to the cloud has meant the difference between sinking or swimming.

The journey to cloud adoption is not simply a one step process. In fact, it can often be a confusing, daunting and intimidating experience, with so many different services, configurations and costs



such a need for secure, reliable and robust infrastructure such as the cloud than during the coronavirus pandemic. As hybrid working has become the new normal for many employees, cloud

to consider. Business leaders looking to both increase cost optimisation and accelerate their digitisation efforts must therefore carefully consider their decisions and look towards a digital solution that best fits their

requirements.

This is where adopting a hybrid cloud strategy comes into play. Although striking the right balance between public cloud and controlled, private cloud can be tricky, when done right this solution can offer real value – without compromising on cost, security or compliance. So, what actually is hybrid cloud? Why is demand for this solution growing? And should business leaders be looking to invest?

## DEFINING MOMENT

Hybrid cloud is an architectural pattern that connects at least one public cloud and one private cloud, with the necessary orchestration implemented between them to ensure a company's computing workloads run smoothly.

To become truly hybrid, these diverse cloud environments must be seamlessly interconnected and function as one combined infrastructure to serve its application needs. This is different to multi-cloud infrastructure – a variation of hybrid cloud – where application workloads are spread across two public clouds and are used to manage diverse tasks.

There is an array of benefits that hybrid cloud has to offer. From moving workloads freely between different cloud environments as circumstances change, to helping expand the adoption of Agile and DevOps methodologies. This architectural pattern helps organisations of all sizes to achieve their objectives more efficiently

than public or private cloud alone.

- **Flexibility, scalability and security**

Hybrid cloud can give organisations the best of both worlds. For example, private cloud offers control and isolation for critical security operations, whereas the public cloud provides cost effective, elastic



pricing for temporary consumer demands and seasonal peaks in business activities. At a time when many organisations are looking to improve their security and reduce costs, we clearly see this blend as a welcome benefit for all.

Essentially, businesses can benefit from the flexibility and scalability of the public cloud, moving as many non-critical functions to this space as possible, all the while creating greater capacity and enhancing security for the private one. Sensitive data in the private cloud will then be stored according to the parameters established by current data protection regulations. Put simply, having access to

hybrid cloud enables businesses to serve each unique need efficiently, in a swift and secure manner.

#### • Cost optimisation

Effectively partitioning services across public and private clouds can often lead to greater cost optimisation. By continually re-evaluating an organisation's use of cloud and exploring new cloud services that could be leveraged, subsequent optimisations can result in improved performance, a reduction in costs and a better return on investment.

In addition, hybrid cloud enables business leaders to allocate public cloud resources for short-term needs, such as product testing or peak traffic during a specific event, at substantially lower costs than using an on-premises data centre. Setting up a traditional data centre requires a lot of capital expenditure and upfront investment, so it is understandable why businesses opt for a more flexible option.

#### • Business acceleration

By opening up a wider choice of cloud native technologies, hybrid cloud enables faster innovation that helps businesses to stand out from the competition, respond efficiently to diverse consumer behaviours and deliver rapidly changing business use cases. For example, public cloud adoption offers enhanced agility and an ability to quickly spin-up infrastructures to host new

products for consumers, without severely disrupting core business operations.

## AVOIDING THE PITFALLS

Adopting hybrid cloud requires careful consideration, implementation and upkeep. Business leaders must therefore make sure to truly weigh in whether cloud is the best option for the organisation and consider the common pitfalls to avoid when adopting this strategy.

#### • Avoid manual management of infrastructure

It is important that organisations do not attempt to manage hybrid infrastructure manually, as this can result in errors and inconsistencies across the board. For example, the infrastructure

**‘As hybrid working has become the new normal for many employees, cloud services are a key facilitator in ensuring organisations can remain operational, even in the most challenging circumstances.’**

landscape can become complex over a period of time as new business functions are introduced, and it becomes hard to rollout changes. To avoid this, implement infrastructure automation from day one and promote this throughout the route to live environments. Infrastructure as code (IaC) can provide advantages over manual provisioning, both in terms of initial provisioning time and ongoing maintenance.

#### • Make sure resources are not being wasted

Always ensure the cheapest combination of resources are being used for given use cases. For example, make sure money is not being wasted in the public cloud by leaving resources running when they



70

are no longer doing anything. It is also vital that the right network design is in place before spinning-up new cloud infrastructures. This provides clear network zoning and avoids error when various networks are peered together for seamless communication.

- **Choose technology options based on need and not industry hype**

Business leaders looking to truly benefit from the value hybrid cloud has to offer should avoid getting influenced by cool tech and industry hype. Using cloud native technology without stopping to consider its suitability for a given use case is an unnecessary risk. Organisations must therefore take the time to understand the challenges they are facing and opt for the right solution for the right price that can create conditions to deliver true business value.

## DECISION TIME

Ultimately, as with every choice related to business, the decision to adopt a hybrid cloud strategy must be taken based on the needs and challenges of the wider organisation. While the benefits of hybrid cloud are clearly extensive, a careful rigour must be applied to establish if organisations will benefit from shifting workloads to the public or private cloud, or a combination of both. ■



### SACHIN DESHPANDE

Sachin Deshpande is founder at Tech Amigos. He has decades of software engineering experience, working across different industry verticals and on a variety of technology stacks. His entrepreneurial journey started 27 years ago when he graduated in computer sciences from the University of Pune. 2015 was a turning point in his career, when he moved into the start-up world and led the creation of a global digital technology team of over 100 high performing, multi-disciplinary engineers. Deshpande continued his start-up journey with the creation of Tech Amigos.

**WE HOPE YOU HAVE ENJOYED**

## **Inside\_Networks**

**COMING UP IN FEBRUARY 22'S ISSUE:**

**SPECIAL FEATURES:**

- > **COPPER CABLING SYSTEMS**
- > **COLOCATION DATA CENTRES**

**TO FIND OUT MORE ABOUT PROMOTION  
WITHIN THESE FEATURES [CLICK HERE](#)**

- > **ALL THE LATEST NEWS, VIEWS, COMMENT AND ANALYSIS**
- > **WHAT CAN BE DONE TO ACCELERATE THE TRANSITION TO ZERO CARBON EMISSIONS THROUGH ENERGY EFFICIENT DATA CENTRES?**
- > **WHY TECHNOLOGIES LIKE WI-FI 7 AND LI-FI STILL CAN'T THREATEN COPPER CABLING NETWORKS**
- > **BEST PRACTICE FOR TESTING COPPER CABLING AND THE PITFALLS TO AVOID**
- > **THE LATEST DEVELOPMENTS IN THE GLOBAL COLOCATION DATA CENTRE MARKET AND WHAT THE FUTURE HAS IN STORE**
- > **THE REASONS BEHIND THE DATA CENTRE SKILLS SHORTAGE AND WHAT NEEDS TO BE DONE ABOUT IT**
- > **MOVES, ADDS AND CHANGES IN THE CHANNEL**
  - > **NETWORK INFRASTRUCTURE CASE STUDIES FROM AROUND THE WORLD**
  - > **THE LATEST PRODUCT, SYSTEM AND SERVICE DEVELOPMENTS**

**FOR A FREE SUBSCRIPTION  
[CLICK HERE](#)**