Inside_Networks

THE NETWORK INFRASTRUCTURE E-M

Green for go

T
R
IN
D
C

AGAZINE WWW.INSIDENETWORKS.CO.UK

JUL
19

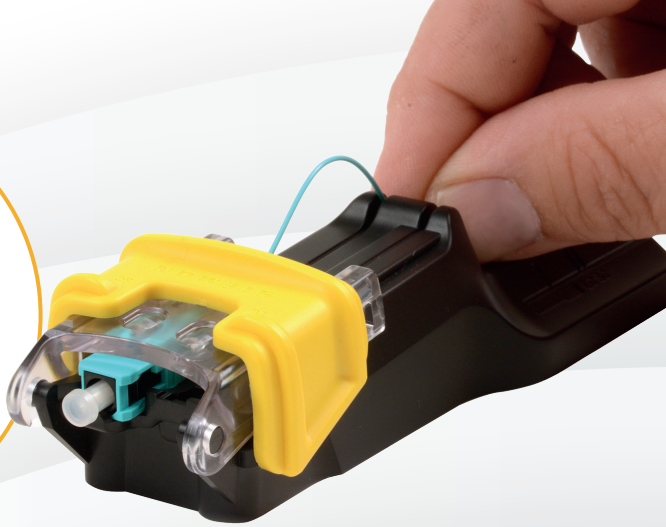
HE ROLE OF
RENEWABLE ENERGY
N DATA CENTRE
DESIGN AND
OPERATION

Supporting documents

DEVELOPMENTS IN COPPER CABLING STANDARDS

Delivering the goods

INTEGRATING INTELLIGENT BUILDING AUTOMATION WITH THE IOT



Reduce termination time. Ensure reliability.

Buy 300 LightBow connectors and receive a FREE termination kit.

For a limited time only.

LightBow

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

Discover more: siemon.com

SIEMON™

6 **ROB'S BLOG**
Walking the walk

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

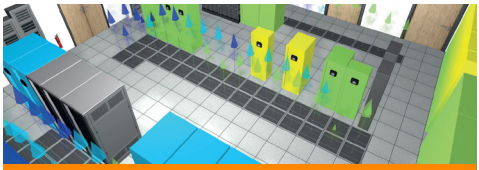
18 **MAILBOX**
The pick of the recent emails to Inside_Networks

21 **QUESTION TIME**
Industry experts examine whether enough is being done to make data centres more sustainable and the role of renewable energy in their design and operation

34 **COPPER CABLING STANDARDS**
James Withey, liaison officer between IEEE 802.3 and ISO/IEC SC25 WG3, explains how copper cabling standards groups can progress in parallel and harmonise as they do so

39 **COPPER CABLING PRODUCTS AND SYSTEMS**
A selection of the very best copper cabling products and systems available today

46 **CHANNEL UPDATE**
Moves, adds and changes in the channel



50 **ENERGY MANAGEMENT**
Dean Boyle of EkkoSense believes data centres should be paying greater attention to energy management

54 **ENERGY MANAGEMENT SOLUTIONS**
State-of-the-art energy management solutions profiled

56 **ENERGY MANAGEMENT**
Richard Wellbrock of Colt Data Centre Services looks at how data centre providers are embracing energy efficiency

60 **QUICK CLICKS**
Your one click guide to the very best industry blogs, white papers, webinars and videos

62 **PROJECTS AND CONTRACTS**
Case studies and contract wins from around the globe

64 **SPOTLIGHT**
Rob Shepherd talks to Andrew Stevens about his work to improve training and skills development provision within the enterprise and data centre network infrastructure sectors

68 **PRODUCTS AND SERVICES**
The latest network infrastructure products, systems and services

71 **FINAL WORD**
Nick Sacke of Comms365 examines the benefits of integrating intelligent building automation with the internet of things (IoT) to create a solution that really delivers

Certified Integrated Infrastructure Technician

5 Day Program

Certify your knowledge and gain:

- Develop a "smart hands' approach to infrastructure delivery
- BTEC Level 4 Professional Award
- Official CIIT® Certification
- Use of CIIT post nominal title
- Use of the CIIT® Logo

Take your existing network infrastructure skills to new technical levels, developing a "smart hands" approach to infrastructure delivery and gain a comprehensive knowledge of a range of intelligent devices that support smart building technical architecture.

The Certified Integrated Infrastructure Technician (CIIT®) program develops the knowledge and practical skills required to deliver network infrastructure projects that include the installation and commissioning of intelligent network devices. It's a comprehensive five day program perfect for those with at least two years of verifiable experience within the network infrastructure sector, or relevant qualifications and certifications in a wider project environment.

Practical hands-on sessions are incorporated throughout this program, focusing on PoE network equipment architecture. Learners will also site and mount equipment to optimise coverage and direction and will commission and configure devices into service. Such devices include wireless access points, VoIP telephony, CCTV cameras, security controlsystems (both swipe access and biometric).

Certified Integrated Infrastructure Technician

BTEC Level 4 Professional Award

5 Days

Download full program details here

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

Contact the CNet team today:
info@cnet-training.com
+44 (0)1284 767100
cnet-training.com

Figuratively speaking

EDITOR
Rob Shepherd
07708 972170

SUB-EDITOR
Chris Marsland

ADVERTISING MANAGER
Kate Paxton
01603 610265

CREATIVE DIRECTOR
Vishnu Joory

TECHNOLOGY CONSULTANT
James Abrahams

CIRCULATION MANAGER
Debbie King

ACCOUNTS
Billy Gallop

CHALK HILL MEDIA

We all know that data centres consume a lot of electricity and have an increasingly large carbon footprint. However, it's always a bit of a shock when research is published that indicates how high these figures are. Most of the time they require some further analysis, as the parameters that are measured can vary. It also means that while some of the numbers that are published make good headlines, they might be overstating the impact of the data centre sector on the planet – however, I use the word 'might' advisedly.

One thing is pretty much universally agreed though, and that's the important role that renewable energy should have in data centre design and operation. With that in mind, we've asked a panel of experts to examine what can be done to increase the sustainability of data centres and whether the sector as a whole is guilty of failing to address the challenge of reducing its environmental impact. **CLICK HERE** to read their comments.

On a related subject, in this issue we have a special feature dedicated to energy management. Richard Wellbrock of Colt Data Centre Services looks at how data centre providers are embracing energy efficiency and then Dean Boyle of EkkoSense goes on to explain why he thinks that greater attention should be paid to energy management. **CLICK HERE** for Richard's article and to read Dean's **CLICK HERE.**

Copper network cabling is fascinating for many reasons – not least because it continues to evolve in new and interesting ways. Standardisation is a vital part of the picture and in this issue James Withey, liaison officer between IEEE 802.3 and ISO/IEC SC25 WG3, explains how standards groups can progress in parallel, offering solutions to each to each other and harmonising as they progress. **CLICK HERE** to read his excellent article.

Last but certainly not least, I'd like to say a massive thank you to all those who participated, sponsored and provided raffle prizes for the Inside_Networks 2019 Charity Golf Day. The amazing sum of over £13,000 was raised for Macmillan Cancer Support and a great time was had by all. You can see a round up of the event in next month's issue and don't forget that if you'd like to comment on any of these subjects, or anything else to do with enterprise and data centre network infrastructures, I'd be delighted to hear from you.

Rob Shepherd
Editor

GOLD MEMBERSHIP PROTECTS YOUR INVESTMENT AND MINIMIZES YOUR CREW DOWNTIME!

Your Versiv makes you money every time you use it. To further augment profitability it is a smart decision to protect your investment and limit unplanned downtime and costs with the best custom-built maintenance program available in the market today.

To learn more about becoming a Gold Member either click here to be **contacted** or here to **download** the Gold Services Datasheet.

FLUKE networks

YouTube
/ExcelNetworking

Click on the below titles to view each webinar:

Smoke Classification
Flaming Droplets Classification
Acid Gas Testing
Eca v Dca
CPR and BS6701 A1
IEC 60332-3

Have you checked out the series of Excel Explains…webinars?

www.excel-networking.com

excel
without compromise.

CBRE Data Centre Solutions forms global alliance with CNet Training

CBRE Data Centre Solutions has announced its commitment to further enhance the certification credentials of its global technical workforce. Through a strategic alliance with CNet Training, CBRE will deliver a training and development programme that requires each of its data centre technicians to achieve the Certified Data Centre Technician Professional (CDCTP) certification.

Martin Murphy, chief operating officer at CBRE Data Centre Solutions, said, 'We place tremendous value on the work that our data centre technicians and broader technical teams undertake, and we want to ensure that they are recognised as the most skilled and knowledgeable in the world. The CDCTP certification will certainly enhance our teams' talent, while at the same time deliver on our risk management priorities and drive superior outcomes for our clients.'

Andrew Stevens, president and CEO at CNet Training, added, 'This is another industry first and we are delighted to be part of such a huge global commitment to education and professional development with CBRE. I believe no other organisation has committed to demonstrating that their data centre technicians are the best in the world by proving it with 100 per cent CDCTP certification. This approach will ensure that CBRE will continue to lead the way in data centre management and operational excellence, and challenge the rest of the industry to step up.'

Inside_Networks 2019 Charity Golf Day raises £13,000 for Macmillan Cancer Support

The Inside_Networks 2019 Charity Golf Day raised £13,000 for Macmillan Cancer Support, taking the total since the event started to almost £90,000. This sum was the result of industry-wide support and a great day's golfing at Hanbury Manor PGA Championship Course in Ware, Hertfordshire, which was followed by a three-course dinner, prize giving, auction and charity raffle.

With main sponsorship provided by LMG, Comtec, Excel Networking Solutions, Mills, ExcelRedstone, Computacenter and CNet Training, 130 people turned out to make this year's event the best ever and it provided a welcome opportunity for all areas of the industry to network.

Rob Shepherd, editor of Inside_Networks, said, 'Once again the industry put rivalries aside to raise a considerable sum of money for Macmillan Cancer Support. Last year's total was smashed and to be able to raise £13,000 for such a worthwhile cause highlights the generosity and kindness of those who attended. The event wouldn't have happened without such great support and I would like to extend my thanks to all the players and sponsors and, in particular, Andrew Stevens of CNet Training and Mark Cumberworth of Slice Golf and Events for their work in making the event such a success.'

A full review of the event will appear in the Aug 19 issue of Inside_Networks.

Lack of diversity is fuelling the IT skills deficiency

New research from the Cloud Industry Forum (CIF) shows that the skills challenge is going to increase over the next three years for tech businesses. The link between the continuing skills challenge and a lack of diversity in the workplace are part of the same issue, but is consistently overlooked by tech business leaders, claim Memset.

The CIF research analysed the findings from interviews with 250 senior IT business decision makers in small to medium sized enterprises (SMEs), large enterprises and public sector organisations in the UK. The research found that 52 per cent of UK tech companies lack IT skills in at least one area of their businesses. Furthermore, half of respondents expected to face a skills gap within three years, more than double the current figure.

Commenting on these findings, Memset's chief operations officer, Annalisa O'Rourke, said, 'The latest research from CIF shows that the skills challenge is not going away and, in fact, is only going to become more acute in the years ahead. We read a lot about the need to upskill existing workers and to train the next generation, but what is often less talked about is the need to expand the gene pool of potential recruits. For example, only a fraction of the UK's female workforce operates in IT, and this is a massive constraint on the potential numbers of people who could be qualified to work in the sector. We have a big cultural job to do.'

15 per cent of IT professionals have too many data sources to count

Research conducted by Node4 has found that despite four in five (81 per cent) IT leaders expecting their budgets to increase across 2019, 23 per cent still believe that this will not be enough to meet their strategic ambitions. In addition, a third of IT leaders (32 per cent) are concerned that they will struggle to maintain cyber defences on current budgets.

The Node4 Mid-Market IT Priorities Report, which surveyed 300 mid-market IT decision makers revealed that of those who would like additional IT funding, two thirds (65 per cent) believe they would require a budget increase of up to 15 per cent to ensure that they are able to meet the needs of their business.

Paul Bryce, chief commercial officer at Node4, commented, 'The vast majority of mid-market IT leaders expect to be working with greater budgets in 2019, and this is no surprise as businesses move to more digital futures. However, not all believe that this amount of budget will be enough to fulfil their ambitions.'

Protect your data and stay connected at the edge.

The rise of IoT has made data access and connectivity vitally important.

Cloud storage can be effective, but has major limitations — including latency, bandwidth, security, and lack of off-line access — that can affect performance. Because of this, edge computing and on-premises infrastructure has become a critical need.

With local edge solutions you can keep your IoT applications powered and running at the speed of digital business.

That's Certainty in a Connected World

Discover what is edge computing and why it matters?

www.apc.com/edge

Life Is On

APC by Schneider Electric

HellermannTyton

Zone Cabling Solutions

Complete Network Connectivity

HellermannTyton manufacture a range of quality connectivity products for applications in every area of your network infrastructure.

From building entry point, to the comms room all the way to the desk, HellermannTyton has a solution for all of your zone cabling and networking needs.

https://goo.gl/ogvQVk

MADE TO CONNECT

1. Zone Cabling Enclosure
2. Distribution Chassis
3. Pre-terminated Cassettes
4. Copper / Fibre Patch Panels
5. Copper Patch Leads
6. Pod
7. WAP Secure Outlet
8. Cat6 Outlets and Faceplates
9. Helawrap Cable Management
10. MDU - S5 Enclosure

Equinix officially opens £90m data centre in London

Equinix has opened the doors of its new International Business Exchange (IBX) data centre at its London Slough campus. The new £90m high performance data centre – named LD7 – forms part of a wider £295m investment from Equinix into the UK's digital infrastructure throughout 2018-19. The site will provide interconnection and colocation to support businesses with their IT transformation initiatives.


Russell Poole

Russell Poole, managing director UK at Equinix, said, 'We are still seeing significant customer demand in London, as enterprises look to increase their business offering through implementing IT infrastructures that are able to keep pace with the continually evolving digital landscape. London has maintained its position as one of the most important connection points in the world and this new data centre will be a welcome addition to our burgeoning London Slough campus, whilst also supporting the rollout of 5G in the UK. As one of the most technologically advanced data centres in the world, LD7 is also set to raise the bar for sustainability in the data centre industry, which is very important to us.'

This news comes as Equinix has announced that it will open 12 new IBX data centres and expand 23 existing IBX data centres in 2019, as part of an expected $1.73-$1.92bn of non-recurring capital expenditure expansion programme for the year. As well as London the investment includes new and expanded sites in Amsterdam, Frankfurt, Hamburg, Helsinki, Madrid, Paris, Sofia, Stockholm, Warsaw and Zurich.

EkkoSense announces support for Infrastructure Masons' 2019 Scholarship Fund programme

EkkoSense has become a supporter of the Infrastructure Masons (iM) Scholarship Fund, which has been set up to help bridge the talent gap in the digital infrastructure sector. The iM Scholorship fund supports educational programs, funds scholarships and seeks to help to define the digital infrastructure job ladder to support the evolving needs of industry sector businesses.


Simon Allen

Simon Allen, executive director of the Infrastructure Masons, said, 'One of the biggest challenges facing the fast growing digital infrastructure sector is the shortage of talent entering our industry. IM's mission is to create a platform for our members to connect, grow and give back. One of our key current initiatives is Bridging the Talent Gap, where Infrastructure Masons is focused on funding scholarships for approved degrees and certificates. We're delighted that EkkoSense is supporting this and our Education Challenge fund, with projects including the creation and support of a community of digital infrastructure educators, alignment of mentoring and internship programs, as well as the funding of scholarships.'

Leviton recognised for transatlantic growth

The Leviton Network Solutions business unit was recently awarded the prestigious Expansion in the UK Award at the BritishAmerican Business (BAB) Transatlantic Growth Awards. The award recognises Leviton's commitment to trade, investment, and jobs between the UK and USA.

The award also acknowledges Leviton's significant capital investment into UK operations, benefiting the greater transatlantic economy. Such investments include the recently opened Data Centre Factory in Glenrothes, Scotland. Further investment was deployed into Leviton's new sales office in central London.

Andy Sharkey, Chloe Barnard and Pete Gough of Leviton

Andy Sharkey, senior sales director northern Europe for Leviton Network Solutions Europe, who received the award on behalf of Leviton, said, 'It's a great honour to be recognised alongside such distinguished and successful companies operating in North America and the UK. We have put significant investment into better serving our customers in both regions over the years, and it means a lot to be recognised by BAB for our efforts. We look forward to working with them in the future.'

IT issues cost companies £3.4bn per year in lost productivity

A survey of 1,137 UK workers, carried out by Probrand.co.uk has revealed that companies are losing £3.4bn every year due to IT issues. The surveyed workers, who all use IT systems in their workplaces, said they waste an average of five per cent of their working day due to connection or technology related issues.

The top five workplace IT issues reported were slow running equipment (34 per cent), internet connectivity issues (27 per cent), cyber breaches (19 per cent), additional equipment such as printers and scanners not working (11 per cent), and outdated hardware (nine per cent). 27 per cent said that their workplace IT systems are hindering their productivity, with this number rising to 33 per cent in larger companies with in-house IT departments.

Matt Royle, marketing director at Probrand, commented, 'A productive workforce is integral to the success of a business, as is ICT in enabling that. It's clear from our findings that businesses are not helping themselves when it comes to resolving IT related issues.'

Pro Tip #17

Use fasteners instead of tie wraps.
They won't damage cables.

Start Your Next Cat 6A Project with Confidence

The Leviton Cat 6A Interactive Reference Guide covers all aspects of Cat 6A, including:

- Applications and environments, including data centers, wireless access points, PoE, and AV
- Standards and best practices
- Tips for pathways, telecom rooms, work area and more

▶ Download this 90-page guide today at **Leviton.com/6AGuide-UK**

LEVITON

Welcome to Nexans

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

Data Centres

Office & Enterprise

Industrial Environments

Healthcare

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

Nexans
BRINGS ENERGY TO LIFE

More than half of IT staff frustrated by nasty network surprises

According to new research from Paessler, UK IT staff's biggest frustrations in the workplace are networks unexpectedly failing with no warning (63 per cent) and end users reporting problems before IT even knew about them (54 per cent).

'Often problems are difficult to predict in advance,' said Martin Hodgson, country manager for UK and Ireland at Paessler. 'Many issues can originate from the users themselves, with them failing to read instructions or not reporting minor challenges that then grow into much bigger issues.'

However, when technology and networks do run smoothly, there is little appreciation for the work that IT staff do for their business. Almost half of those surveyed said that they are disappointed by a lack of appreciation or understanding for what they do (46 per cent). This lack of appreciation is a much bigger issue than in other countries around the world. For example, in the US, IT staff were 10 per cent less likely to complain about this lack of appreciation, with 36 per cent of staff reporting feeling underappreciated.

Hodgson concluded, 'The best running networks are ones that are proactively managed – those where potential issues can be easily identified and addressed before they become major challenges or nasty network surprises. End users don't really know what goes on behind the scenes, and the admins role is only really made apparent when something goes wrong and this could explain why some feel underappreciated.'

NEWS IN BRIEF

New analysis by Juniper Research has found that smart city traffic technology solutions deployed to ease chronic congestion in cities will generate $4.4bn in revenue in 2023, up from $2bn in 2019. These solutions typically use sensors in combination with machine learning software algorithms to dynamically alter traffic light phasing according to traffic levels, smoothing urban traffic flows.

Prysmian Group's Karona Overblow System has been shortlisted in four categories of the Connected Britain awards 2019. It is a solution comprising overblow cables, installation equipment, connectivity and comprehensive training, which enables installers to put the system quickly into use.

Onecom has secured a £30m finance package from HSBC UK.

BSO has strengthened its capabilities within the wholesale telecoms, cloud and technology sectors with the acquisition of IX Reach.

Mike Smith has joined the Electrical Contractors' Association (ECA) as director of technical. Smith previously held a variety of commercial roles at SES Engineering Services over the past 25 years and was most recently the firm's estimating and sector director.

Don't believe the hyp

Hi Rob

Since the start of the year headlines have centred on a plethora of 5G enabled smartphone releases. The term 5G is now being embraced by the public but does this explosion of cutting edge devices really signal the start of the 5G era?

As with the rollout of 4G, 5G will involve thousands of infrastructure upgrade projects, and this isn't something that can happen overnight. What's more, 5G is not simply an evolution of 4G – it is fundamentally different. It requires a radical update to just about all aspects of any current 2G/3G/4G network. Just one example that demonstrates the enormity of the project ahead is the transition from the current 20-30kg antennas, to new 'active' antennas in the 80-100kg range.

This work will be expensive and highly technical and, as such, operators will be forced to follow a strict demand strategy. Initially, we can expect 5G to be rolled out on a restricted basis, appearing first in major urban centres where population size and demand can warrant superfast connectivity.

As we stand today, over 99 per cent of UK premises have access to mobile coverage, and the areas that do not receive any are mostly rural and sparsely populated. Due to the remote locations of the final one per cent, it may be uneconomical for mobile operators to provide a service without some central intervention. Not only does this demand the provision of towers, but as the calls and data need to get back to the core of the mobile operator's network, this requires both power and connectivity.

In many rural cases this means digging for tens of kilometres across many people's land to deliver these services. The cost and time taken to organise all of the required approvals and agreements makes it uneconomic for a single operator.

There are also a number of pragmatic considerations, namely the financial implications and how to make it

pe

commercially viable. It has been estimated that rollout costs across Europe could reach £400bn. The GSMA recently released its new Mobile Industry Manifesto for Europe, calling for governments and regulators to support operators in delivering 5G.

The demand for 5G services will undoubtedly rocket following the recent launches, however, a recent report from PwC suggested that only one third of consumers would be willing to pay more for it. The challenge for the industry is how to introduce the technology at a reasonable cost for consumers and still secure a return of investment (ROI) on the infrastructure costs. This is likely to be a delicate decision making process that will take some time. Once this is determined, operators will then have to translate the benefits of 5G to consumers in order to justify the costs – there is still a long way to go!

The launch of so many 5G devices so far this year is great news for the industry – it highlights the demand for 5G connectivity and gives operators, network providers, regulators, and governments a license to start working on the infrastructure upgrades that will make it a reality. Indeed, we can expect that some consumers will be using 5G as soon as this year. However, the industry must remain grounded and the pragmatic decisions made now will have a big impact on its success in the future.

John Lillistone
Arqiva

Editor's comment

The costs associated with the 5G rollout are enormous and a great deal of strategic thinking will be required if those charged with implementing it are to achieve an ROI. That said, demand will undoubtedly be high and there is no doubt that 5G is a significant milestone in the evolution of wireless and mobile technology.

IDEAL NETWORKS

Proof of Performance

PoE Pro

Eliminate guesswork from your PoE installations

NEW

The new PoE Pro eliminates guesswork when installing, maintaining and troubleshooting PoE devices and data cabling.

- **No more trial and error**
  Accurately measure the maximum power available
- **Supports PoE up to 90W (PoE++)**
  Test all PoE Classes (0-8) and Types (af/at/bt)
- **Identifies the powered pairs**
  Helps to determine PoE switch or mid-span injector
- **Verify the PoE installation**
  Pass / Fail indication to IEEE standards
- **Extended Power Test**
  Some switches may provide power exceeding their IEEE Class rating. Measure the maximum available power up to 90 watts.
- **Plus all the familiar cable testing features of the VDV II Pro**

For more information,
please visit **www.idealnetworks.net**
or call **(0)1925 428 380**

Time for action

Data centres are massive consumers of electricity and although some organisations have done much to make their facilities more sustainable, others have merely paid lipservice to the issue. Inside_Networks has assembled a panel of industry experts to examine whether enough is being achieved in this area and the role of renewable energy in data centre design and operation

Debate surrounds whether it was Mark Twain or Benjamin Disraeli who first coined it, but the saying 'there are three kinds of lies – lies, damned lies, and statistics' is often used to debunk figures that describe how much energy the data centre sector uses, and its contribution to overall carbon emissions.

IT HAS BEEN SUGGESTED THAT THE ICT INDUSTRY COULD USE UP TO 20 PER CENT OF ALL ELECTRICITY AND EMIT UP TO 5.5 PER CENT OF THE WORLD'S CARBON EMISSIONS BY 2025. WHAT ROLE CAN, AND SHOULD, RENEWABLE ENERGY PLAY IN DATA CENTRE DESIGN AND OPERATION, AND IS THE SECTOR AS A WHOLE GUILTY OF FAILING TO ADDRESS THE CHALLENGE OF REDUCING ITS ENVIRONMENTAL IMPACT?

So when Swedish researcher and senior expert lifecycle assessment at Huawei, Anders Andrae, stated that the ICT industry could use up to 20 per cent of all electricity and emit up to 5.5 per cent of the world's carbon emissions by 2025, some were incredulous. Regardless of whether you agree or disagree with Andrae, it cannot be denied that the data centre sector still has work to do to reduce its impact on the environment.

Hyperscalers have led the way, with Apple's data centres now 100 per cent renewably powered through power purchase agreements. Others have also used wind and solar energy, direct access solar arrays, local micro-hydro projects, biomass facilities and more. Some fund renewable power production projects such as wind farms, and others work with their electrical power providers to encourage investment in renewable power sources. Smaller data centres could look to different approaches, such as using renewable energy as a secondary sources.

While much has, and is, being done to address data centre energy inefficiencies in terms of cooling, for example, there is still a long way to go. Whether data centre operators of all sizes are genuinely committed it is another issue and it has been suggested that 'green fatigue' has set in.

Inside_Networks has assembled a panel of experts to discuss the role of renewable energy in data centre design and operation, and whether the sector as a whole guilty of failing to address the challenge of reducing its environmental impact.

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

ANDIE STEPHENS
ASSOCIATE DIRECTOR AT THE CARBON TRUST

Hyperbole works well in headlines and journalists love a big number, but exaggeration can be problematic when it comes to tackling important issues like climate change. It also does not help when the outcomes from scenario models – a useful tool in academia – are misinterpreted as predictions by those outside the field.

The claim that ICT could account for 20 per cent of global electricity and 5.5 per cent of all carbon emissions by 2025 comes from a 2015 academic paper by Andrae and Edler, which was updated in 2017. This paper includes various scenarios, illustrating what could happen based on a range of assumptions. These use 2010 electricity data, with a constant annual percentage increase in electricity consumption from that point – resulting in exponential growth.

It is just one example amongst an assortment of wildly exaggerated claims that regularly warn that ICT will consume vast amounts of the world's electricity in the near future. There were plenty of similar ones about cryptocurrency last year.

The reason that scenarios can produce such large numbers is that in previous years data centre electricity use was increasing dramatically – an average of nearly nine per cent a year in the US between 2000 and 2010 – and so this rate has been extrapolated outward. But there is good evidence that since 2010 the pace of increase has slowed dramatically.

Reality is quite different to scenarios. A recent study by Malmodin and Lundén – based on a detailed analysis of a comprehensive set of actual data – concluded that ICT currently accounts for around 3.6 per cent of all global electricity use and 1.4 per cent of the greenhouse gas emissions.

Data centres still use substantial amounts of electricity but there are plenty of ways to reduce the impact they have. A lot of the major operators are switching to renewables, either by directly installing them on-site or through power purchase agreements. And data centres are also being located in places with lower carbon grids, or where the ambient temperature is cooler – such as Nordic countries – to reduce the energy requirement for cooling.

But despite this, industry can always do more. The key test is asking whether the ICT sector is on a trajectory compatible with limiting climate change to no more than a 1.5°C temperature increase compared to pre-industrial levels, and how quickly it can get to zero carbon emissions.

'The key test is asking whether the ICT sector is on a trajectory compatible with limiting climate change to no more than a 1.5°C temperature increase compared to pre-industrial levels.'

OWN YOUR EDGE WHEREVER YOU NEED IT.

Vertiv brings you closer to your data with complete Edge solutions to ensure reduced latency, increased bandwidth and optimal performance to run your critical applications within your IT infrastructure.
#OwnYourEdge

www.VertivCo.com/OwnYourEdge_EMEA

REGISTER TO THE VERTIV PARTNER PROGRAM

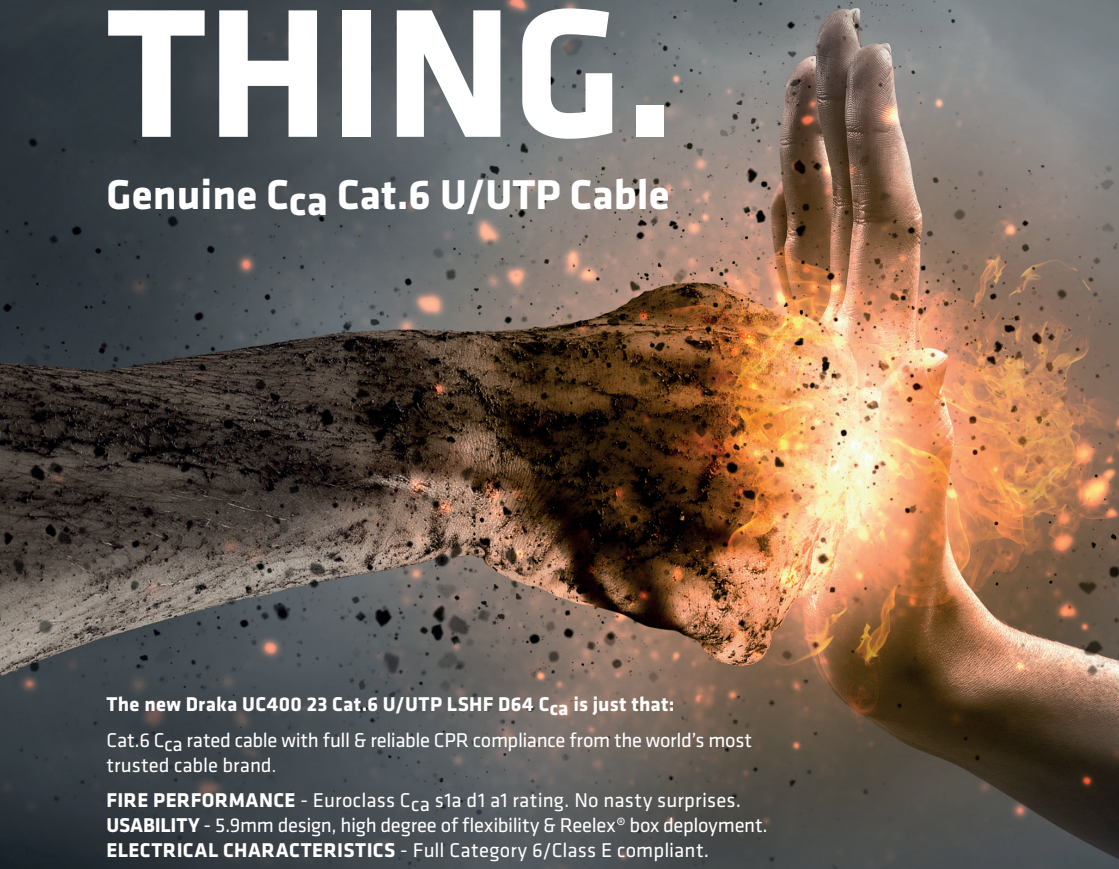
The New Vertiv Incentive Program - VIP:
As easy as
Sell. Earn. Repeat

www.Vertiv-VIP.com

VERTIV.

THE REAL THING.

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



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

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

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

Keeps What It Promises!

draka.mms@prysmiangroup.com

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

Draka

A brand of the Prysmian Group

EMMA FRYER
ASSOCIATE DIRECTOR AT TECHUK

Whenever another cataclysmic prediction emerges about future data centre energy use I look for two things – sources and agendas.

In the realm of disruptive technology, sources do not improve with age, and although alarmist predictions are regularly and deservedly debunked, it doesn't prevent people referring to outdated or discredited material, ignoring context and caveats to build myth on myth, often unintentionally. Hidden agendas also encourage exaggeration – policy makers justifying interventions, journalists needing a story and purveyors of efficiency technologies overstating the problem.

But the real reason that data centre energy use is subject to such divergent predictions is that we can't put an exact figure on consumption. We don't even agree what a data centre is. Sector energy flows are also difficult to track – how much of our conspicuous growth that is driven by large cloud providers, policy agendas, digitisation of business and consumer activities, is offset by efficiency gains and outsourcing? Although traditional on-premises functions are shrinking as they are migrated to cloud, improving efficiency and transparency, this reduction is hard to quantify.

In the UK our data on sector energy consumption is probably the best in the world – measured and audited, not predicted, derived or modelled. Our commercial operators currently consume just under 3TWh/year, 0.8 per cent of UK electricity. However, this picture is incomplete and we don't know how much to add for enterprise activity. At least the same again, we think, taking us to around two per cent of electricity or 0.6 per cent of primary energy supply.

Significant? Yes, but that's to be expected, as data centres underpin our digital economy in the way that steel, chemicals and oil underpin manufacturing. They also enable energy reductions across the wider economy – smart grid, intelligent transport, IoT – improving efficiency, productivity and delivering dematerialisation.

But are we doing enough? No, nobody is. The data centre sector already buys proportionately more renewable power than any other industry, is actively investing in renewables and developing exciting battery storage technologies for continuity and load balancing. However, current standards are focused on infrastructure rather than IT, and our advertorial and freemium business models encourage user profligacy. There is no need to panic, but we should pay more attention to software and helping consumers understand their digital impacts.

'The data centre sector already buys proportionately more renewable power than any other industry.'

JOHN BOOTH
MANAGING DIRECTOR AT CARBON3IT

We should always be wary of suggestions regarding data centre energy use and carbon emissions, as many of the statements are based on extrapolated data and the agenda of the originator.

Renewable energy technologies, as well as other best practices, feature in the EU Code of Conduct for Data Centres (Energy Efficiency) (EUCOC). They do have a part to play in data centre design and construction either directly through on-site or local generation or indirectly via off-site power purchase agreements. Some of the big global data centre powerhouses use this method to procure energy and meet legislative requirements.

We must remember that large hyperscale data centres are not the norm – there are only around 450 globally, although many more are planned. The real chance to implement sustainable and green IT principles into the sector will come from the edge, where operators can implement the EUCOC and use capital assets such as UPS, generators or even fuel cells. This will need careful consideration though – they are a replacement for the grid and could negate the need for back-up generation, as they operate like an array. In addition, waste heat reuse could provide services to the wider community (district heating, swimming pools and urban farms) and grid operators (for instance, to go off-grid in the event of power problems or to provide short-term balancing operations).

The Catalyst project is exploring how data centres can be flexible multi-energy hubs, providing both heat and energy to local electricity and heating grids, sustaining renewable energy sources and energy efficiency. There are four pilots and the project is due to report on some of its activities in the near future.

Overall, there are some organisations that take their environmental responsibilities very seriously and others that do not – the key indicator is their certification to the appropriate ISO standards. The most common are ISO 14001 environmental management (EMS) or ISO 50001 energy management (EnMS) systems, Companies should consider becoming certified to these as a minimum.

Finally, regulation will be more stringent. The recent publication of the Streamlined Energy & Carbon Reporting (SECR) regulations in the UK will require detailed resource use to be documented and data centre owner operators are advised to get on top of this sooner, rather than later.

'We should always be wary of suggestions regarding data centre energy use and carbon emissions, as many of the statements are based on extrapolated data and the agenda of the originator.'

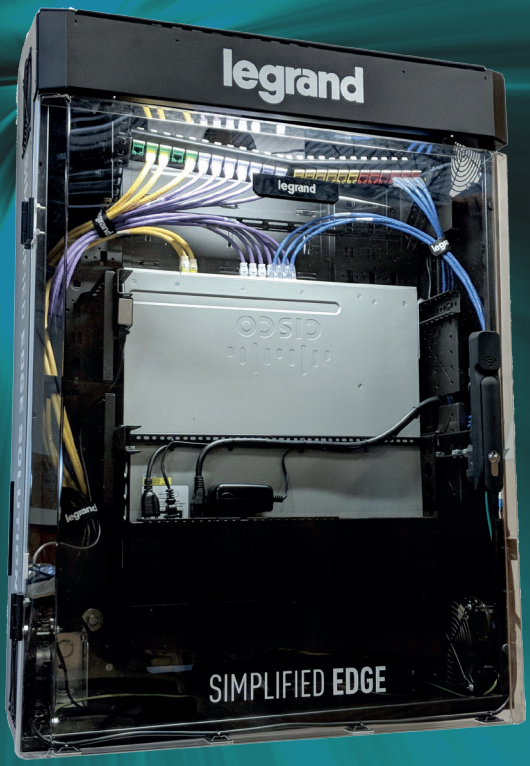
Integrated Intelligence to your network Infrastructure

Ortronics delivers integrated intelligence to your network infrastructure through its most recently launched Vertical Wall-Mount series.

The Vertical Wall-Mount (VWM) system is a low profile solution for edge computing, and all building network needs.

The VWM series features a new vertical angle for mounting networking and IT equipment that helps to reduce the overall cabinet footprint off the wall. With up to 8RU of space, the VWM is perfect for smaller edge installations that require a more distributed topology.

- Rear Pan Level Lock™ Mounting Panel - Flexible equipment mounting for edge computing
- 2RU & 4RU Pivoting Rail Kits - Allows for easy installation and configuration of 19" mixed media patch panels
- Zero RU Mounting Kit with Pivoting Rear Access - Simplifies cable installation, routing and management



For more information about the Ortronics solutions Dunasfern offer

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

ORTRONICS®

DUNASFERN Inc. AURIGA

TED PULFER
ENTERPRISE AND END USER CONSULTANT AT KEYSOURCE

In terms of energy consumption the IT industry is fast approaching the size, scale and impact of the tourism sector, which currently accounts for five per cent of global CO2 emissions. Data centres are some of the biggest contributors to that carbon footprint. At a time when awareness of green issues is more heightened than ever, everyone involved in the design and operation of IT estates is coming under increased pressure to address their impact.

Following the EU Code of Conduct for Data Centres is a good start but given that the sector has previously been accused of greenwashing – using spin to exaggerate its environmental credentials – it's time for more radical options to be adopted. Thankfully these do exist for nearly every facility, no matter the scale.

Renewable energy can play a big part in future plans, for instance. Installing measures for self-generated renewable energy from wind farms, hydropower or solar as part of the data centre estate can reduce CO2 emissions by up to 30 per cent compared to conventional generation. It's this sort of action that will begin to make a marked difference.

Whilst the geographical location can often present logistical challenges, the UK industry should be looking abroad for further inspiration. In Sweden, the Boden Type One project, a 600kW data centre, is leading the way. It utilises machine learning software to reduce server energy by 20 per cent, while also using renewable energy for power, fresh air for cooling and is built to a wooden eco-friendly construction. Data centre operators would be wise to keep an eye on the findings of its first year in operation, which are set to be revealed in March 2020.

There are still plenty of companies that don't understand how to best reduce their environmental impact, yet the associated efficiency gains and potential reduction in operational costs make it something all businesses would be wise to explore.

'Following the EU Code of Conduct for Data Centres is a good start but given that the sector has previously been accused of greenwashing – using spin to exaggerate its environmental credentials – it's time for more radical options to be adopted.'

POWER DISTRIBUTION UNITS

OLSON®

ISO 9001: 2015
QUALITY ASSURED

BESPOKE OFFERING

STEEL CONSTRUCTION

QUICK DELIVERY

NEW

INTELLIGENT POWER MANAGEMENT

- Remote Monitoring & Switching
- Local Coloured Display
- Programmable Sequential Start
- External Tempurature & Humidity Measurement
- USB Port for Storing & Recalling Setup
- Can Be Specified With Any of Olson's Data Centre Products or as Part of a Bespoke Design or an In-Line Version for Retorfits

REMOTE SWITCHING & MONITORING

+44 (0)20 8905 7273
sales@olson.co.uk
olson.co.uk

SINCE 1961

DESIGNED & MANUFACTURED IN THE UK


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

GERARD THIBAULT
CHIEF TECHNICAL OFFICER AT KAO DATA

As data becomes one of the most significant properties in global economies, the need to communicate, process and store that data efficiently and effectively increases. Kao Data has negotiated an energy supply contract sourced from 100 per cent renewable energy sources, reducing the impact on the environment, without impacting financially on our customers.

The reality is that 40-60 per cent of the data centre operational expenditure is energy – that has to be paid for from end customer revenue. By deploying innovative environmental controls it is possible to reduce energy use, offering more effective total cost of ownership pricing.

Indirect evaporative cooling techniques eliminate the need for mechanical refrigeration, which massively reduces the energy used to provide the optimal operating conditions for customer IT equipment. Furthermore, understanding the climatological environment of a location allows data centre owners and operators to develop the most effective operational systems for customers.

Scandinavian economies are innovators, with opportunities enabled by accessible community heat distribution grids. The UK does not have the infrastructure and there are no national plans to develop such a platform. We therefore need to reduce the energy requirement of a data centre through improved performance. Ultra efficient cooling requires air-to-air exchange offering limited opportunity for heat reuse from the exhaust air, without the need for further capital equipment and energy consumption to boost the temperature.

The latest developments in high performance servers such as those that use hybrid air and water cooling are very interesting. This technology offers higher IT capacity and increased liquid temperatures with the potential of heat reuse locally in the residential and business sectors, thus reducing carbon footprint. These kinds of innovations will help improve operational efficiency for the benefit of the community.

‘The reality is that 40-60 per cent of the data centre operational expenditure is energy – that has to be paid for from end customer revenue. By deploying innovative environmental controls, it is possible to reduce energy use offering more effective total cost of ownership pricing.’

RUSSELL POOLE
MANAGING DIRECTOR UK AND THE NORDICS AT EQUINIX

Sustainability and the push to renewable energy continue to be frequently discussed in the data centre industry and the need to be green is as vital as the invention of new technologies.

Growing demand for apps enabling video streaming and virtual reality means energy consumption is unlikely to decrease anytime soon. Add this to the imminent launch of 5G and you get huge quantities of data needing to be stored and processed, requiring more and more data centres. So, progress needs to be made in maximising energy efficiency, and reducing dependence on non-renewable sources.

The data centre sector certainly has a role to play in powering the internet sustainably. We have a responsibility to lead the way in designing data centres that are as sustainable and environmentally friendly as possible.

Indeed, sustainability has underpinned Equinix's entire design process over the last 20 years. We have focused on sourcing local and renewable energy, and re-using energy – for example, our AM3 data centre uses its excess heat to power one of the nearby university buildings.

We also have numerous systems in place to make our footprint as green as possible. Our LD6 data centre incorporates green building technologies and design practices including indirect evaporative cooling, indirect heat exchangers, rainwater harvesting and air handling units, all of which mean that, for 85 per cent of the year, it is cooled without turning on any air conditioning units.

All industries have a role to play in protecting the environment and the data centre industry is continuing to do more to combat its global footprint. As the data centre industry continues to grow in response to increasing demand for data, fuelled by streaming, gaming, and the upcoming rollout of 5G, amongst other things, the responsibility to protect and sustain the environment should be at the forefront of business decisions.

'As the data centre industry continues to grow in response to increasing demand for data, fuelled by streaming, gaming, and the upcoming rollout of 5G, amongst other things, the responsibility to protect and sustain the environment should be at the forefront of business decisions.'

Netscale Solutions
Delivering the highest fibre density

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

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

R&M

Which came first – the chicken or the egg?

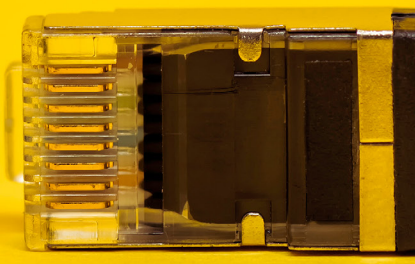
This conundrum also applies to copper cabling, where emerging applications require new standards, and the standards need to know the applications that might run on them. James Withey, liaison officer between IEEE 802.3 and ISO/IEC SC25 WG3, explains how standards groups can progress in parallel, offer solutions to each other and harmonise as they progress

The IEEE project to create 10Mb/s single pair applications has lit the torch within both TIA and ISO/IEC to produce multiple cabling standards that support the emerging 10BASET1 applications covered by the IEEE 802.3cg project. These include its game changing 1km reach, but also support for the already published short reach applications – 100BASE-T1 and 1000BASE-T1. In addition to simply covering the existing applications, the new generic cabling documents provide specifications that might future proof the cabling against potential new applications.

FIRST UP

The first of these projects is an ISO/IEC technical report that gives application specific guidance.

ISO/IEC TR 11801-9906 provides channel and link performance specifications, as well as guidance on cable and connector selection and cable sharing in multi-pair cables. All of these specifications are based on a single application, with the inherent upper frequency, length and performance limitations. This serves an installer who knows the application they wish to run, but



also provides an opportunity for a set of generic standards that will support all of the applications and provide confidence that any emerging applications might be supported.

Both TIA and ISO are producing such generic single pair cabling standards, with ISO/IEC developing amendments to several parts of its 11801 series to include single pair generic cabling. Drafts of this project, which will produce an amendment to ISO/IEC 11801-1, currently include three new classes of cabling. The first of these is a class focused on the low data rate, long length applications, which will include requirements across a broad range of lengths up to 1km and the associated wire gauges used for the cable.

The additional classes will focus firstly on higher date rate support at a 100m length by increasing the frequency to 600MHz, and support for applications that might further extend the data rate at the expense of reducing length below 100m by even higher increases to the frequency.

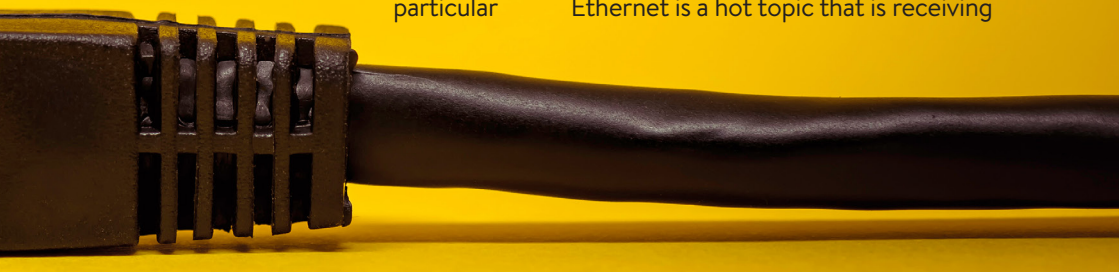
Other parts of the 11801 series are also being amended to incorporate single pair cabling, in particular the ISO/IEC 11801-3 industrial premise standards, where 10BASE-T1 provides an opportunity for simplification of many industrial networks by allowing direct Ethernet communication without need to convert to Industrial Ethernet protocols.

LIKE MINDED

TIA takes a similar approach with its TIA568.5-D project, with the current draft including four new categories of single pair cabling. The first two are similar to the ISO/IEC low data rate, long length class and the 100m class, however, the additional two new categories currently target shorter lengths without further increase in frequency.

Coordinating these cabling specifications with potential application projects returns us to the ancient conundrum. Consensus building activity on higher date rate single pair applications has recently emerged at IEEE, and discussions will continue throughout the year regarding the viability of such a proposals.

Before coming to any decisions, experts from all sides of the industry will look at not just technical feasibility, but also examine the demands and use cases for such applications, and how they might fit with existing applications and media. We might take guesses as to if we will see application projects emerge, but it may be too soon to make any predictions other than the future of single pair Ethernet is a hot topic that is receiving a lot of attention from cabling and networking suppliers.



THE HEAT IS ON

Speaking of hot topics, single pair Ethernet is also an application that can take

advantage of copper cabling's ability to carry both data and power, which brings with it the need to consider the effects of cable heating due to remote powering.

With any copper cable, as the power delivery increases the temperature of the cable rises, causing higher insertion loss and a reduction in length allowed. The good news is that these temperature rises can be predicted using the same techniques that were first developed for four pair cabling in the ISO/IEC TS 29125 and the TIA 184-A remote powering guidelines documents.

Whilst single pair Ethernet will not reach the 90W supplied by IEEE 802.3bt, which was published in September 2018, IEEE 802.3cg will use the power over data lines (PODL) approach and be able to power to the end device even at 1000m. With this in mind the ISO and TIA remote powering documents are being updated to include the necessary information to understand the affect of the thermal rise on the single pair cabling.

> 'It may be too soon to make any predictions other than the future of single pair Ethernet is a hot topic that is receiving a lot of attention from cabling and networking suppliers.'

These are not the only areas where thermal management is being considered. ISO/IEC 14763-2 is being revised to give requirements so that these issues are considered prior to new installations or refurbishments of cabling. Further, an amendment to the ISO/IEC 18958 automated infrastructure management (AIM) standard will combine information about length and resistance from test instrumentation, with information regarding which cable and bundle the power is running on to reduce power consumption and help minimise thermal rise.

NEW TOPOLOGIES

Sometimes it's easy to guess which came first and, in the case of the modular plug terminated link (MPTL), the answer was that TIA was the first to include this cabling topology when it published TIA 568.2D. This topology, which is widely used when devices such as lighting, security cameras or Wi-Fi access points are located where it does not make sense to install a faceplate outlet, provides a plug that is connected directly to the device – thereby eliminating the equipment cord.

ISO has been quick to catch up. A draft technical report is already nearing completion and is well harmonised with the TIA approach. Publication is expected early 2020 and, as with the TIA document, it will provide specifications for MPTL, and ensure that the plug portion of the MPTL is included in the conformance criteria.

ON REPORT

This is not the only new topology that is being considered by an ISO/IEC technical

report, with work ongoing to add direct attach copper cabling in the technical report ISO/IEC 11801-9907, and the industrial end to end links moving from a technical report into the amendment for ISO/IEC 11801-3.

First included in a 2017 technical report, ISO/IEC 11801-9902 end to end links included the effects of the plugs located at the ends of the channel, which are excluded from normal channel measurements. This makes them particularly suitable for systems where the end plugs have been field terminated.

The transition from technical report to

the ISO/IEC industrial premise standard introduces normative requirements and will expand the scope to include Class EA end to end links, allowing characterisation to the full potential of X-code M12 systems. The requirements will also be simplified compared to the technical report and no longer require the user to understand and select the number of connectors in the end to end link in order to test the cabling.

PULLING TOGETHER

Ultimately, asking which came first doesn't really matter when the different standards organisations pull together and produce harmonised documents in support of each other. This tried and tested process allows development of standards for new applications, cabling and topologies to be available together. This means that the end user can take full advantage of the latest developments in applications and data cabling without concern of breaking eggs or solving unsolvable conundrums. ■

JAMES WITHEY

James Withey is a senior engineer at Fluke Networks. He has 20 years of experience in testing of cabling systems and has been involved with most international standard bodies including TIA, ISO/IEC and IEEE. He is the liaison officer between IEEE 802.3 and ISO/IEC SC25 WG3.

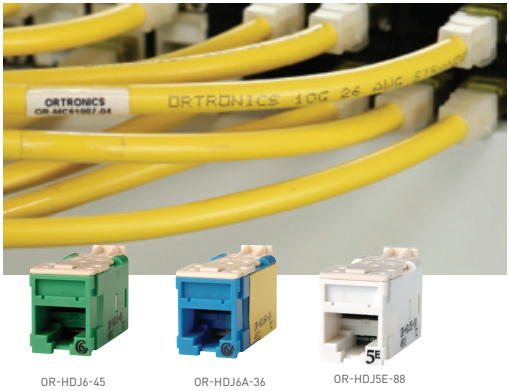
ORTRONICS®

CLARITY® HIGH DENSITY COPPER SOLUTION

THE NEW HIGH-DENSITY CLARITY® JACK AND PANEL PRODUCTS SOLVE DENSITY CHALLENGES WITHOUT SACRIFICING PERFORMANCE.

The smaller HDJ jack footprint allows up to 48 ports of premium Category 6a, 6 or 5e performance in 1 rack unit panel. This system is ideal for applications like data centres, distribution areas (TIA-942 Standard) or limited space, high density environments.

Ortronics® HDJ patented, recessed angled modular patch panels combine with Ortronics vertical cable managers to provide up to quadruple the density as standard panels with horizontal cable managers.



OR-HDJ6-45

OR-HDJ6A-36

OR-HDJ5E-88

THE NEW HIGH-DENSITY JACK AND PANEL SERIES PROVIDES:

- Less required rack and floor space to reduce real-estate costs
- A nearly transparent signal path, when used with Clarity patch cords, for enhanced network performance
- New cable termination process that is easier and faster for Category 6a and 6
- A new slide-lock mounting for a quicker installation time that reduces labour costs, while locking the jacks firmly in place
- Flexibility by combining copper and fibre in the same panel

legrand®

E: ortronics@legrand.co.uk | W: legrand.us/ortronics/high-density-copper

Leviton

The new Leviton Category 6 Flat Unshielded 110-Style Panels are designed to improve installation efficiency and performance in Gigabit Ethernet applications.

The patch panels include Leviton Patented Retention Force Technology, which promotes consistent performance over the life of the system. The installer friendly design allows for quick installation due to standard 110 terminations on the rear of the panels that follow the normal installation colour sequence. Leviton's patch panels are compatible with 19-inch standard racks and cabinets. They have also been tested to support 100W power over Ethernet (PoE).

Additionally, the patch panels come with an innovative cable management clip and integrated jumper for fast and easy installations. The cable clip secures cables quickly – 40 per cent faster than traditional methods – without the need for user supplied ties or wraps. It provides clean, individual cable retention and supports a proper cable blend radius. Plus, the clip is made from recyclable material, making it eco-friendly.

CLICK HERE to learn more.

www.leviton.com

Excel Networking Solutions

Excel Networking Solutions offers one of the market's most comprehensive ranges of copper cabling solutions, inclusive of Category 5e, 6, 6_A, 7_A and 8 copper cable, constituting a solution for projects where performance and ease of installation are prerequisites.

Excel has evolved to incorporate a range of copper cabling solutions that meet or exceed the minimum Euroclass requirement of Cca, s1b, d2, a2, as stipulated in the latest revision of the BS 6701:A1.

To support customers in complying with the industry regulations and standards, Excel has adopted a transparent approach to providing the market with relevant information, with a cable's Euroclass clearly available on individual specification sheets as well as on its Declaration of Performance certificate.

In addition to this, a series of Construction Products Regulation (CPR) webinars demonstrates Excel's commitment to meeting the requirements of industry regulations and communicating these with customers. The CPR defines a clear process and requirements for proof of compliance to a specific Euroclass, and with Excel's transparency in the face of industry changes and regulatory updates, customers can rest assured that all products supplied by Excel into the EU market are compliant with the CPR and the BS 6701:A1.

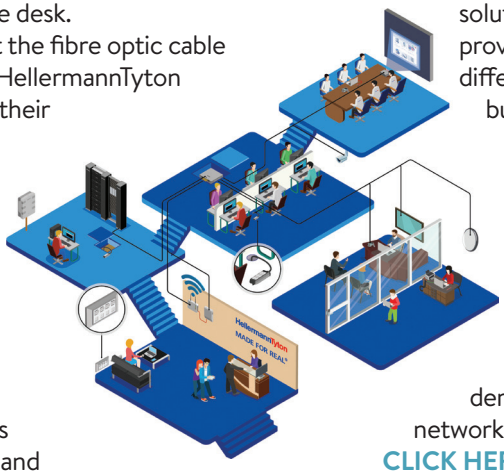
To find out more **CLICK HERE.**

www.excel-networking.com

HellermannTyton

HellermannTyton has a connectivity solution for every phase of your network infrastructure, from cable entry into the building, distribution across the building to the data outlet at the desk.

From the moment the fibre optic cable enters the building, HellermannTyton products come into their own. The S5 MDU enclosure will distribute any incoming fibre to the comms room or to multiple zones in the building. From the comms room, HellermannTyton has a number of copper and optical fibre solutions that can then be used to connect offices, active equipment and hardware to the outside world.



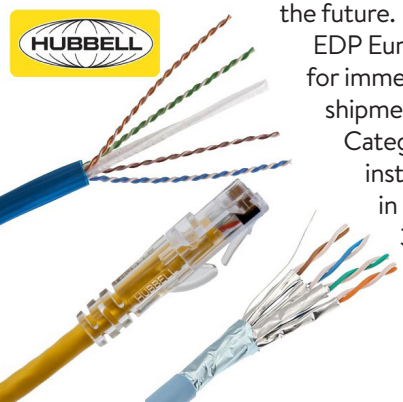
HellermannTyton manufactures a wide range of innovative solutions designed to provide connectivity to different zones within a building. Whether it's an under the floor cable distribution box, a work area pod or a pre-terminated to the desk solution, HellermannTyton has a product that can meet the demands of almost any networking scenario.

CLICK HERE for more product information.

www.htdata.co.uk

EDP Europe

EDP Europe is the UK stock holding distributor for Hubbell Premise Wiring – a leading manufacturer of high performance network cabling solutions for both copper and optical fibre networks. The company's products are designed to exceed current standards, enabling its customers to have confidence that the chosen networking solution will last long into the future.



EDP Europe stocks, for immediate shipment, Hubbell Category 6 installation cable in boxes of 305m and Category 6A on 500m drums. Both are CPR compliant achieving classes B2ca – s1a, d2, a1 and Cca – s1a, d2, a1 respectively.

EDP Europe also offers a wide variety of Hubbell networking components from stock including patch panels, wall plates and modules, field termination plugs and jacks, including Category 6A shielded jacks. Additionally, Hubbell's advanced high density cable management system, iFrame, is available in flatpack form.

As well as installation cable EDP Europe stocks Category 6 and Category 6A patch cords in 3ft, 5ft, 7ft and 10ft lengths (90cm, 1.5m, 2.1m and 3m).

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

www.edpeurope.com

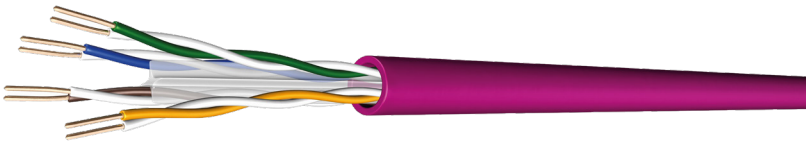
Dunasfern

Dunasfern's manufacturing partner, Prysmian Group, recently launched its new UK manufactured Draka UC400 23 Category 6 U/UTP LSHF D64 Cca data cable.

After several redesigns and significant investment, the cable meets all criteria without compromise. High data transmission levels are maintained, and the cable has a compact 5.9mm diameter that ensures flexibility for easy installation.

Prysmian Group's Multi-Media Solutions department spent over 18 months working on solving the challenge of manufacturing a Euroclass Cca rated Category 6 U/UTP cable product. It was not easy to produce a cable that can withstand the Reelex/ installation simulation tests, but the company now has a solution which is 100 per cent reliably tested by SH02 WG10 notified bodies and can be deployed from a Reelex box.

CLICK HERE to learn more.
www.dunasfern.com



Siemon

Specifically targeted for deployment at the data centre edge, Siemon's end to end TERA Category 8.2 copper cabling system delivers transmission performance up to 2GHz to support emerging high speed 25 and 40 Gigabit (25/40GBASE-T) applications in data centre switch to server applications.

The system is founded on Siemon's TERA connector, which was originally chosen as the ISO/IEC 11801 interface for Category 7A/Class FA and easily achieves new Category 8.2 compliance. Combining the TERA connector with Category 8.2 S/FTP 2000MHz cable and patch cords delivers a system that exceeds ISO/IEC Category 8.2/Class II specifications for two connector, 30m Class II channels.

Siemon's TERA Category 8.2 system supports autonegotiation, is backwards compatible to support copper based Ethernet applications from 1-40Gb/s in a variety of configurations, and provides enhanced internal and alien crosstalk and insertion loss performance over Category 8/8.1 RJ-45 based systems.

For further information about Siemon's TERA Category 8.2 copper cabling system **CLICK HERE.**

www.siemon.com

Comtec

As a premier distributor of Siemon and its largest UK stockist, Comtec offers the full Z-MAX cabling solution that delivers end-to-end, best in class performance.

Siemon's Z-PLUG, the latest addition to the Z-MAX family, delivers performance levels exceeding all Category 6A parameters, whilst providing support for IP-based PoE powered devices such as LED lighting, AV equipment, WAPs, cameras, security systems and more.

To discover how Z-MAX can underpin your intelligent building join us at our next free to attend Evolving Technology event in Bristol on 25th June, where Siemon's Lee Funnell will be speaking on converging building technologies. Geoff Archenhold, founder of IST, will also be discussing the benefits of intelligent lighting and Li-Fi, covering the theory and the fact!

For more details or to register **CLICK HERE.**

Can't make the event? Call 01480 415000 to arrange a meeting with one of our external team, or to discuss your requirements with our Siemon product manager.

www.comtecdirect.co.uk

Ideal Networks

Ideal Networks has launched a new handheld tester that eliminates guesswork when installing, maintaining and troubleshooting power over Ethernet (PoE) devices and data cabling. PoE Pro measures and reports PoE class, voltage/voltage drop, watts and injector type, making it easy to see how much power is available.

Previously, technicians had to understand all the various standards, device power outputs and cable lengths to be sure a device would operate successfully. PoE Pro eliminates trial and error when installing or troubleshooting PoE systems and installers can now accurately measure the maximum power available to PoE devices in any installation.

Instant, easy to read test results are shown on the large backlit screen, up to a maximum of 90W (PoE++). It displays the voltage, PoE class from 0-8 and type, whether 802.3af, 802.3at or 802.3bt, regardless of cable length, cable quality or other factors. There's no set-up or complicated configuration, users can just connect the PoE Pro to the cable or PoE port to display the maximum power available. There is also Ethernet speed detection (10/100/1000Mb/s) and it quickly determines which media service is running over the cable, such as Ethernet, ISDN, PBX and PoE – resulting in faster fault diagnosis.

For more information **CLICK HERE**.

www.idealnetworks.net

Corning Optical Communications

Corning Optical Communications has bolstered its portfolio of copper solutions following the acquisition of 3M's Communication Markets Division.

Corning now provides access to a comprehensive range of products for all copper cable requirements. This includes Category 5e to Category 6A shielded copper cable solutions (U/FTP, F/FTP, and S/FTP) as well as the popular UTP cable from Category 5e to Category 6A.

Corning's portfolio provides full compliance to the Construction Products Regulation (CPR) for telecommunication cables intended for permanent installation inside of buildings and construction works.

This means that its product portfolio meets the highest standards for safety – including high performance B2ca rated products.

For more information, contact your distribution partner or **CLICK HERE.**

www.corning.com

Mayflex experts in secur

Mayflex has developed its business to become a leading distributor of converged IP solutions. Our product range includes IP security, cabling infrastructure and Ethernet switching products – everything necessary for a successful security installation.

Excellent support

To support our comprehensive security portfolio, Mayflex has a number of committed security experts to assist on a day-to-day basis with all product and service enquiries.

External sales team

The security sales team are available to support customers with product selection and system design. They work alongside our strategic accounts team who provide strong, expert account management, as well as liaising with vendor partners to obtain the best possible pricing and logistics.

In house sales teams

Our highly trained electronic security sales specialists are based at Mayflex's headquarters in Birmingham and provide account management for customers across the UK.

In house pre-sales

We have a dedicated resource also based at our headquarters in Birmingham to ensure your security product requirements are handled quickly and expertly.

Technical support

Our technical support team are available to assist with any queries on the phone from 8am-6pm five days a week.

Specialist Support Services

We have a number of Specialist Support Services accessible to customers, which are ideal for projects with limited time available on-site for installation.

Training

Each of the courses available from the Mayflex Academy are delivered by our own fully qualified training instructors and managers, or by the vendors themselves. Courses are currently delivered at our Birmingham headquarters and City of London offices.

Order online at mayflex.com

The Mayflex website is a great source of information and provides users with some impressive features. There are a number of great new benefits which provide an enhanced experience for visitors to the site.

- All new checkout: The new checkout

Mayflex distributes a range of leading security brands which include:

AVIGILON a Motorola Solutions Company · AXIS COMMUNICATIONS · BCDVIDEO www.bcdvideo.com · IDEAL NETWORKS · alhua TECHNOLOGY · MOBOTIX BeyondHumanVisio

rity solutions

has been designed to make it easier and faster than ever before to make your purchases online.

- Frictionless mobile shopping: Every part of the online store is mobile friendly, ensuring pain free shopping.
- A comprehensive design refresh: A refreshed design that makes it easier to shop with us.
- Product documentation now all under one tab: All product documentation can be found in one place.

- Find what you need faster: All new category structure and carousel, making it quicker and easier to find what you're looking for.

Why buy your security solutions from Mayflex?

As well as the support already featured, when you work with Mayflex you can also be assured of:

- Large stock availability – 98 per cent of orders fulfilled from stock
- Track and trace your deliveries
- Access to demo and meeting room facilities in Birmingham, London and St Neots – available free of charge)
- Comprehensive infrastructure and networking product range
- Trade counter located at our Birmingham headquarters

CLICK HERE to find out more about the full range of electronic security solutions available from Mayflex.
CLICK HERE to find out more about Mayflex by watching our short corporate overview video.

www.mayflex.com

Excel appoints new sales manager in France

Excel Networking Solutions has appointed a new sales manager in France. Hinda Mourali joins the team with over 10 years' experience of working in distribution and installation sales. Her appointment is key to support the business growth and development in the French region, with particular focus on working with existing partners and developing new business opportunities throughout the country.


Hinda Mourali

Speaking about her new role, Mourali commented, 'I am looking forward to facing the challenges of this role with Excel. I am confident that I can use my experience in the industry to promote the Excel product range throughout France to support the existing international team.'

Siemon shares knowledge about network cabling infrastructures across the Middle East

Siemon has successfully completed a series of educational events across the Middle East to share knowledge and expertise on the latest developments and trends impacting enterprise, intelligent building and data centre infrastructure.

During an Emerging Technology Forum (ETF) seminar in Kuwait City, held in partnership with Cisco, Valerie Maguire, director of standards and technology at Siemon, delivered a copper, optical fibre and wireless applications technology update. Siemon's educational programme then moved on to the UAE and the BICSI Middle East and Africa conference and exhibition in Dubai, where Maguire, together with other industry experts, delivered a masterclass on remote power delivery and the role four pair power over Ethernet (PoE) plays in powering the future of intelligent buildings and the internet of things (IoT).

'We are very pleased with the amount of interest our ETFs and educational presentations received both in Kuwait City and Dubai,' said Prem Rodrigues, sales and marketing director for Middle East, India and SAARC at Siemon. 'This confirms the importance of ongoing education and development amongst industry professionals in the Middle East and we will certainly continue to offer these educational events in the future.'

Chatsworth Products (CPI) opens new Electronics & Software Technology Center in Texas

Chatsworth Products (CPI) has opened its new Electronics & Software Technology Center, located in Round Rock, Texas. The state-of-the-art, 34,000ft² facility will allow CPI to have a dedicated location for the research, development, testing and manufacturing of the company's intelligent power management solutions.

'We're aggressively investing in our electronics and software business unit to innovate industry leading power solutions at competitive lead times to meet the scale-out demands of our customers' IT infrastructure,' said Ted Behrens, CPI's executive vice president of global engineering, product management and marketing. 'The Electronics & Software Technology Center will provide the manufacturing footprint for CPI to support the anticipated growth rates over the next five years.'

Eaton appoints Ciarán Forde as data centre and IT segment leader for EMEA

Eaton has announced the appointment of Ciarán Forde as segment leader data centre and IT, to further strengthen the data centre and IT segment across Europe, the Middle East and Africa (EMEA).

With a proven record in his previous roles such as vice president global data centre business at CommScope, Forde brings more than 20 years of valuable experience to the position from the data centre, enterprise and telecom industries. In this new role, he will help transform traditional concepts of power networks in data centre and IT environments.


Ciarán Forde

'We're entering a very exciting time for the sector - where data centres are moving towards becoming truly intelligent, dynamic power environments. I'm proud to be joining a company where innovation and forward thinking are a part of the day to day process as we look to meet these needs,' said Forde.

NBM Technology Solutions joins forces with Vertiv

Vertiv has partnered with NBM Technology Solutions to deliver data centre products to businesses in the UK. Vertiv will provide its complete range of critical IT infrastructure solutions, targeting industries such as data centres, telecommunications and internet services, banking and finance, transportation, utilities, logistics and retail.

As a result, NBM, which was recently awarded Distributor of the Year at the Network Computing Awards, will work with resellers to provide education, training and business development resources, marketing services and pre- and post-sale technical assistance. 'NBM is excited to be able to offer Vertiv's premium infrastructure and high performance solutions to our resellers, allowing them to take their deployments to the next level,' said Danny Kindell, managing director of NBM. 'Vertiv's broad offering and distinctive channel model was a key reason for our recent partnership. We are impressed by the strong expertise Vertiv provides and are eager to grow our business together.'

Mark Carlyle, UK channel director at Vertiv, commented, 'Adding NBM to our distributor network significantly increases our presence in the UK and underpins our rapidly broadening channel strategy. We look forward to working with NBM to deliver unrivalled solutions to their partners and customers across the UK.'

EkkoSense strengthens board with appointment of Mark Acton as non-executive director

EkkoSense has strengthened its board with the addition of Mark Acton as a non-executive director.

Acton brings over 25 years' senior global data centre operations and consulting experience, both in senior executive and non-executive roles. He spent the last seven years as head of data centre technical consulting with CBRE Global Workplace Solutions, where he was responsible for ensuring that the company's service offering set the data centre sector's highest possible benchmarks.


Mark Acton

'EkkoSense is a distinctive proposition, as its intuitive ability to enable real time insight into a data centre's current power and cooling performance can play a key role in helping organisations to manage risk and maximise operational capacity,' said Acton. 'I am excited to be supporting the business in a non-executive capacity as it continues to grow and gain market traction.'

CHANNEL UPDATE IN BRIEF

Elecomm has announced the completion of a transaction to acquire Bardo Electrical for an undisclosed sum.

Olive Communications has appointed Andrew Jane as chief technology officer to drive and support its global technology and cloud services strategy during a time of accelerated growth.

Versa Networks has chosen Nuvias to bring its software defined branch and software defined security solution for wide area networks (WANs) across EMEA.

Nimans has strengthened its relationship with DrayTek by becoming the company's first and only UK Authorised Telecom Distributor.

Extreme Networks has announced the expansion of its ExtremeDojo programme to customers and added a new technical training pathway. Until now, the programme was only available to Extreme's employees and global partners.

Time to get serious

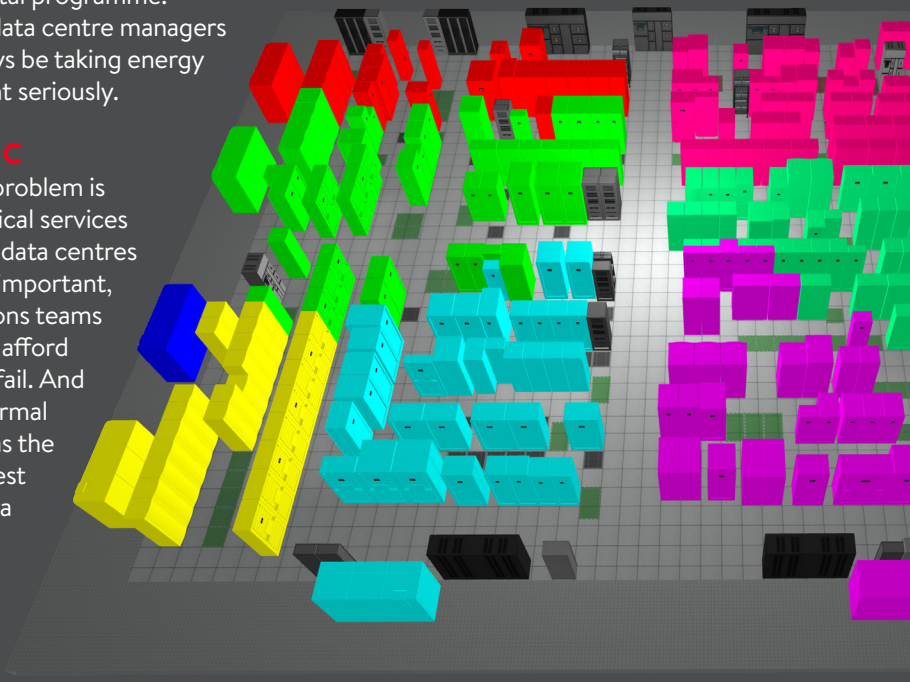
Dean Boyle of EkkoSense believes data centre owners and managers should be paying greater attention to energy management

Data centres are an organisation's second largest consumer of energy, and over 35 per cent of their energy consumption is taken up by cooling. As a result, any energy management initiative that can reduce data centre energy usage can end up making a significant contribution to an organisation's environmental programme. Therefore, data centre managers should always be taking energy management seriously.

HOT TOPIC

Part of the problem is that the critical services powered by data centres are just too important, and operations teams simply can't afford to let them fail. And because thermal issues rank as the second largest cause of data centre loss of service, accounting for almost a third of unplanned outages, it's hardly surprising that operations teams hedge against potential thermal failure by routinely overcooling their data centres.

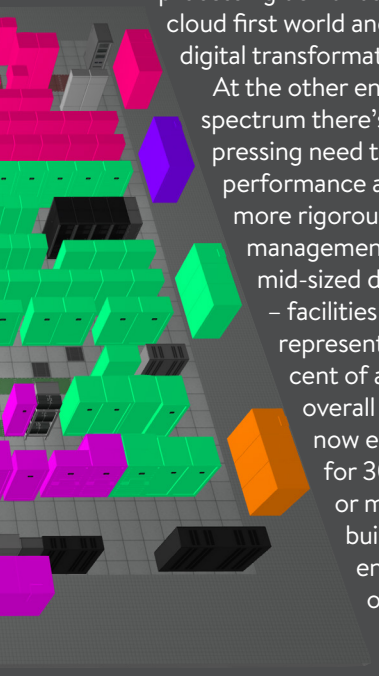
Unfortunately, cooling inefficiencies often mean that these efforts are misguided, with the result that around 11 per cent of racks aren't actually able to



match the data centre cooling compliance guidelines that are recommended by ASHRAE. This is both an expensive and wasteful way to run your operation. Indeed, instead of just continuing to add more costly infrastructure and consuming more power when processing demands increase, organisations should actually now focus on identifying and eliminating their underlying thermal, power and capacity issues.

KEEPING PACE

Of course, there are some organisations that are already doing as much as they can to optimise data centre performance and energy management requirements. Power Usage Effectiveness (PUE) is continuing to fall across the world's biggest data centres. However, these operators will have to keep on optimising data centre performance if they are to keep pace with the insatiable processing demands of today's cloud first world and its relentless digital transformation agenda.



At the other end of the spectrum there's a much more pressing need to optimise performance and encourage more rigorous energy management. Small to mid-sized data centres – facilities that might represent only one per cent of a building's overall space – can now easily account for 30 per cent or more of the building-wide energy bill. Many organisations still don't grasp that a small, yet dynamic comms room can easily consume the same energy as, for example, a major call centre with over 1,000 busy agents.

FREE PASS

Even given this kind of disproportionate power usage, increasingly energy hungry data centres are still often given a free pass by their building management teams. It's easy to understand why – everyone knows how important data centres are and, providing they work as they're meant to, what's the point about trying to improve things and potentially introducing risk into what is a critical part of the business?

This hesitance can prove counter productive, particularly as data centres are continuously evolving. What may have been a fully optimised resource is affected when new often gradual changes are introduced – a transition towards suboptimal performance. As a result, many best practice data centres can still have significant cooling and thermal management issues.

NOT GOING AWAY

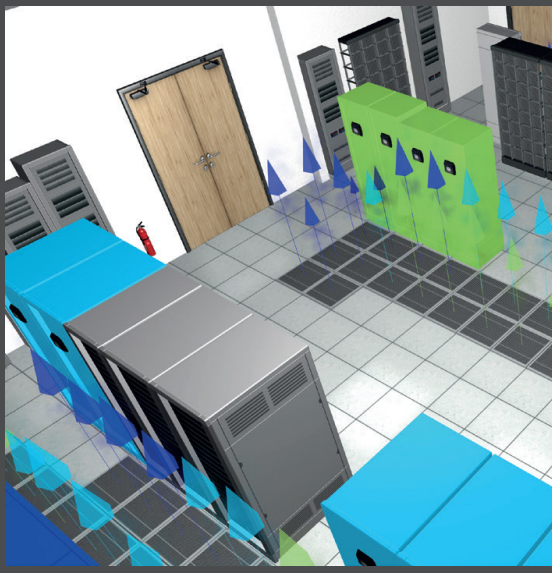
Today's data centre infrastructures have never been under so much pressure. Whether it's preparing for the anticipated data demands of 5G, processing the increased throughput from internet of things (IoT) enabled networks, or simply ensuring 24/7 support for pervasive cloud applications, the demand for compute intensive capabilities is accelerating.

This kind of additional load demand places a growing pressure on data centre teams to run their sites more efficiently. At the same time, they're also being asked to support continued corporate demands for more energy efficient operation. These conflicting demands

are inevitably challenging for operations teams, particularly as projected growth in IT demand means that global data centre energy consumption is still set to double on an annual basis.

MAKING A DIFFERENCE

The good news is that adopting a more structured approach to data centre performance optimisation can begin to square the circle. And with effective thermal optimisation allowing organisations to save around 25 per cent of their data centre cooling costs if they get this right, there's a real opportunity for operations teams to position their data centres for projected growth, while still gaining control of their overall cooling costs.



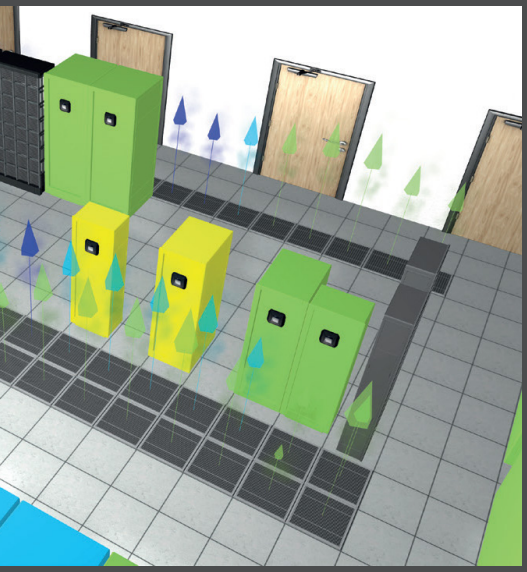
To achieve this they need to stop treating efficient data centre operation as a black art. You really shouldn't require complex data centre infrastructure management (DCIM) suites or an expensive and often imprecise computational fluid dynamics (CFD) consultancy to tell you what's going on in your own data centre. Instead, focusing on real time heartbeat cooling and power readings can provide exactly the kind of software driven decision making and scenario planning that allows you to identify and fix issues before they can start to impact operational performance.

'PUE is continuing to fall across the world's biggest data centres. However, these operators will have to keep on optimising data centre performance if they are to keep pace with the insatiable processing demands of today's cloud first world and its relentless digital transformation agenda.'

CAUSE FOR CONCERN

While transitioning to this kind of optimised environment can unlock real benefits in terms of cooling cost savings, risk reduction and performance optimisation, it's important to remember that not all stakeholders will have the same concerns.

Chief financial officers (CFOs), for example, will undoubtedly appreciate the advantages of cutting data centre cooling costs significantly, but they will be more excited by the opportunity to minimise capital expenditure obligations by removing the need for significant spending on additional data centre cooling



equipment. Having much greater control over operational performance also helps to remove much of the uncertainty around data centre productivity, as an effective optimisation strategy based on real time insight can open up the opportunity for significant further productivity improvements.

Not surprisingly, data centre managers have an alternative perspective. For them, thermal risk is of prime concern so investing in additional cooling equipment to reduce risk always seems like a smart move. Having access to the latest power, cooling and space performance data means that data centre teams can start to make much more informed choices – particularly when it comes to adding new services or introducing new equipment. Effective performance optimisation, with its ability to completely remove 100 per cent of thermal risk from data centre operations, can help protect operations teams from an overreliance on expensive cooling.

SMART THINKING

Factor in the ability to help building management and facilities management teams ensure that data centres meet their demanding compliance/risk obligations, and it appears that an effective data centre performance optimisation approach has the potential to appeal to CFOs, data centre managers and facilities management. Clearly making data centre energy management achievable can also make smart business sense. ■

DEAN BOYLE

Dean Boyle co-founded EkkoSense in 2013 with a clear mission to help organisations resolve the thermal risks their data centres face from inefficient cooling strategies. As CEO he has driven the company's development, from a start-up through to its current position as a leading provider of software driven thermal optimisation and capacity planning for critical live environments.

Mayflex

The ECS4110 Series from Edgecore Networks is a range of Layer 2 switches designed for the small to medium sized enterprise (SME) market, allowing network administrators to build high performing robust networks.

The switches can be deployed in different target network topologies, from small to large. Besides powerful software features, the switches provide a complete solution, in both non-PoE and PoE options.

802.3az Green Saving

The ECS4110 Series incorporates a range of green Ethernet technologies to help you save energy costs for your network. The switches use the latest Energy Efficient Ethernet standard to make efficient use of the Ethernet ports, and also detect link status and cable length, powering down when a port is not connected and reducing power for shorter cables.

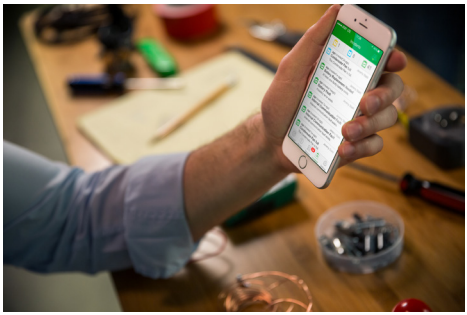
The ECS4110-28P offers the necessary speed, power and management required for the new Ethernet systems. Whether the network is needed for wireless access points, IP cameras, BMS, HVAC, traditional data or access control, the ECS4110-28P has the port speed and PoE budget to cope.

Mayflex distributes the Edgecore range in the UK and leads the way in converged IP solutions.

For more information about the Edgecore Networks range of switches speak to our team of experts on 0800 757565 or **CLICK HERE** to send an email.

www.mayflex.com

Schneider Electric



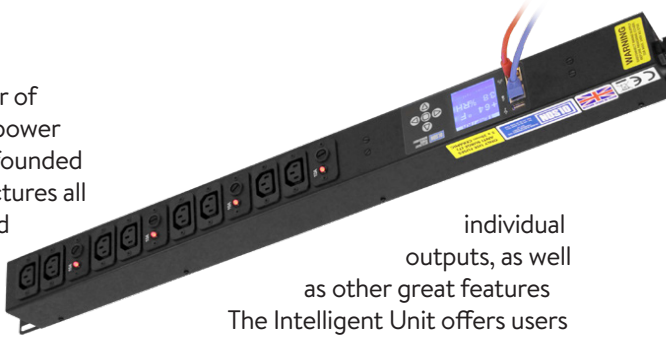
Schneider Electric's EcoStruxure IT Expert is a cloud based data centre infrastructure management (DCIM) solution that brings secure, vendor agnostic monitoring and visibility of all Internet of Things (IoT) enabled physical infrastructure assets.

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

To find out more **CLICK HERE.**

www.schneider-electric.co.uk

Olson Electronics



Olson Electronics is a manufacturer of standard, specialised and bespoke power distribution units (PDUs), and was founded in 1961. Olson designs and manufactures all of its products at its dedicated head office and manufacturing facility in Greater London, UK.

The Intelligent Unit is the newest addition to the Olson range of PDUs, with many features including:

- Remote monitoring and switching of up to 32 outputs
- SNMP alarm trap enabled
- Sequential start
- Temperature and humidity sensors compatible
- UPS input
- Energy consumption readings per individual outputs, as well as other great features

The Intelligent Unit offers users the freedom to manage a data centre remotely while keeping a clear idea of the status of a rack. Users can utilise the SMTP alarm function, where they'll be alerted via email when conditions such as the temperature, outlet states and voltages are not met.

With Olson's capabilities, the variations to suit the user's requirements are endless.

CLICK HERE to find out more.

www.olson.co.uk

EDP Europe

Sensorium DCIM, available from EDP Europe, is a flexible and modular DCIM platform that uses 64bit .NET architecture to deliver unrivalled performance and expandability.

Its powerful communications engine delivers real time, historical, and alarm event information from intelligent power, environmental, security and life safety systems to its fully customisable web based, script powered graphical user interface.

The resulting real time and historical data, when combined with Sensorium's asset and patching register database information, can be used for available space and power based capacity planning and, uniquely, for regression analysis based cooling capacity forecasting. This functionality and information is crucial in identifying opportunities for operating cost reductions for data centre operators, and additional revenue streams for their clients.

Bespoke dashboards and home screens are custom built to meet customer, department or operator requirements so that critical information can be quickly displayed.

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

www.edpeurope.com

Keeping your cool

Richard Wellbrock of Colt Data Centre Services looks at how data centre providers are embracing energy efficiency

Energy efficiency has always been one of the top corporate social responsibility (CSR) priorities for businesses across all sectors. Not only do energy efficient policies help businesses position themselves amongst customers as green, but these policies also boost efficiencies in expenditure and day-to-day operations. Businesses across all verticals are placing increased pressure on data centre providers to improve energy efficiency as a means to create a more responsible and sustainable supply chain.

TREND SETTING

This trend can only continue as global web traffic is set to triple over the next two years. Data centres are one of the most power hungry industries within the technology sector, with energy consumption currently increasing twofold every four years. Couple this with the consistent rise in energy prices and it is clear that data centre providers must practice sustainable and efficient energy consumption policies.

This, however, presents significant

challenges to the data centre sector, where consistent growth has been largely facilitated by a non-renewable energy supply chain. Faced with customer demand to reduce their carbon footprints, green conscious data centre providers are finding innovative ways to source renewable energy and recycle waste that can also benefit the local communities.

Clean energy sources, such as wind, solar and biomass are helping data centres around the world keep their data cool while also staying green.

RACE TO THE TOP

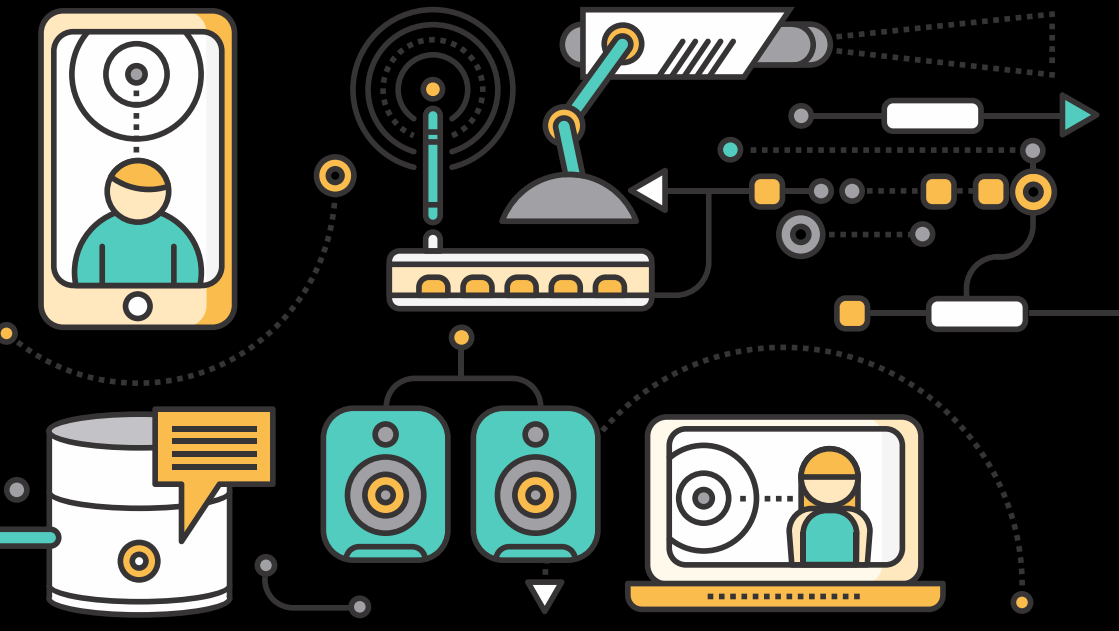
The race towards energy efficiency is truly hotting up in Europe. The use of renewable energy to power data centres is a development that is already under way in most countries within the European Union (EU). However, due to the current compound growth rate of data consumption, which will see 1.7Mb of new data created every second by 2020, even more effort is needed.

The EU has set out a mandate target to source 20 per cent of its energy needs from renewables by 2020. Progress made to date by most of the countries is moving in the right direction. By March 2017, the share of renewables had increased in 22 of the 28 member states.

With governmental backing and a clear EU target to achieve, Europe has now been dubbed the promised land for renewable powered data centres. It has never been easier or more attractive for European industries to adopt practices that can make a real difference in the fight against climate change. Consequently, data centre providers are making the most of renewable resources available when building new sites in Europe.

THE RIGHT DIRECTION

Using renewable energy to power servers can be an exhausting task for data centres to manage. When done right, however, it can be a significant step towards a more sustainable future. The small town of



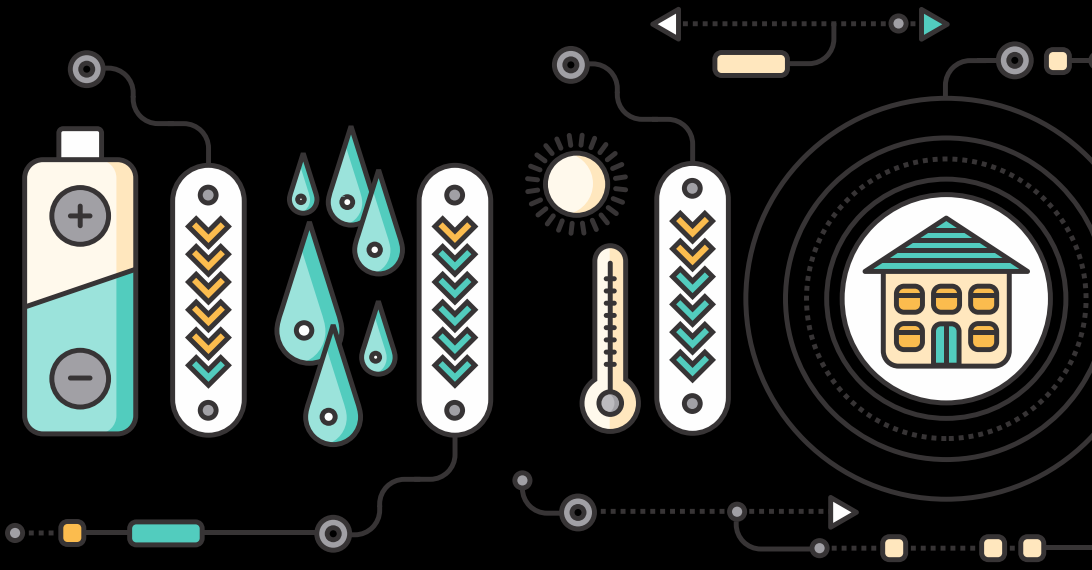
‘Not only must data centre providers introduce efficient energy policies, businesses should also put pressure on operators who are slow to adopt. Customers need to work symbiotically with data centre providers, whilst demanding strategies that achieve measurable improvements in sustainability and efficiency.’

Schlieren in Zurich, Switzerland, is a great example of efficient energy sustainability in practice.

The town is trialling a new way of recycling waste in partnership with Colt Data Centre Services. The entire operation of the 2,500m² data centre is powered by renewable energy sources associated with the way the data centre is cooled. In partnership with the local authority, heat produced from the servers is also used to warm up nearby buildings, public swimming pools and transport facilities.

The energy exchange programme provides a unique opportunity to reduce power usage for the data centre, the town facilities and its local citizens. The federal government is also offering a welcoming tax break with the use of renewable energy to further incentivise local businesses to get involved.

These types of agreements offer mutual benefits to all parties and encourage communities to work together to meet the goal of reducing carbon footprints. The Schlieren case study sets a high, yet achievable, bar for other data centre operators who wish to grow their use of renewables and improve efficiencies.



CULTURE SHIFT

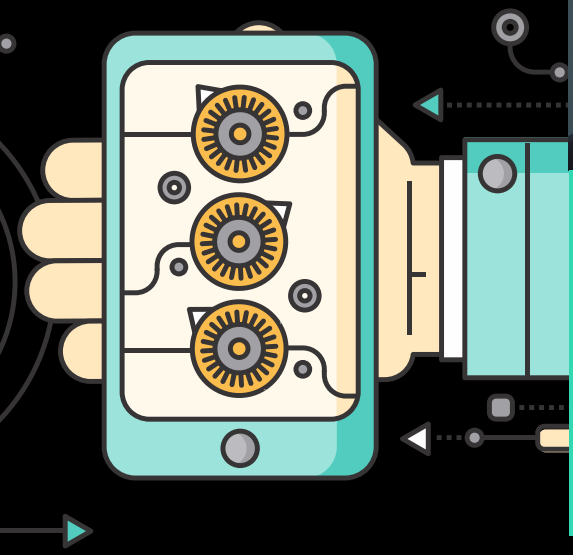
As business and citizens continue on their digital journeys, more initiatives are needed across the entire ecosystem to build a greener future. However, in the short-term, a lack of transparency and reluctance by many businesses to change how energy is sourced and used in data centres will continue to undermine the industry's long-term sustainability goals.

A culture shift is required now if the industry is to achieve key CSR targets, as well as combatting the very real threat of global climate change. Otherwise, increasing emphasis on the importance of CSR policy will create the temptation for operators and businesses alike to greenwash rather than enact significant changes for the better.

Not only must data centre providers introduce efficient energy policies, businesses should also put pressure on operators who are slow to adopt. Customers need to work symbiotically with data centre providers, whilst demanding strategies that achieve measurable improvements in sustainability and efficiency.

ROLE PLAY

Assessment schemes such as Management and Operations (M&O) accreditation will play an increasingly vital role in differentiating data centre operators in terms of their renewable policy. As customers continue to demand greener data centre management, high scoring operators will be viewed more favourably and will be more attractive to potential customers who are wary of their own environmental footprint. This will place the onus on to data centre operators to use renewable energy sources as well as research and develop new energy recycling initiatives that boost efficiency and benefit surrounding communities. ■

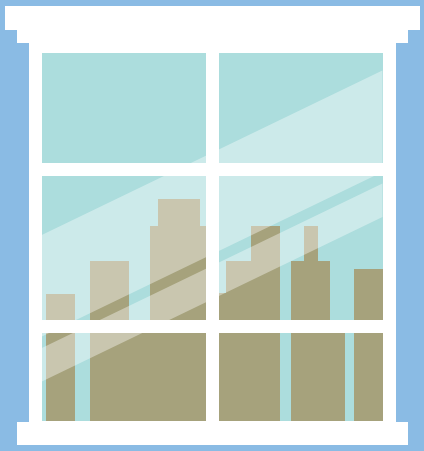


RICHARD WELLBROCK

Richard Wellbrock is vice president real estate at Colt Data Centre Services. Based at the company's London headquarters, he is responsible for leading the global product and propositions, commercial and development teams for the data centre business. Prior to joining Colt, Wellbrock was group commercial director at Infinity SDC.

Quick clicks

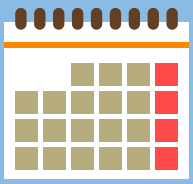
Your one click guide to the very best industry events, webinars, electronic literature, white papers, blogs and videos



Are You Ready for the New Wave of Wi-Fi? is the question posed in a blog from **Siemon.**
CLICK HERE to read it.

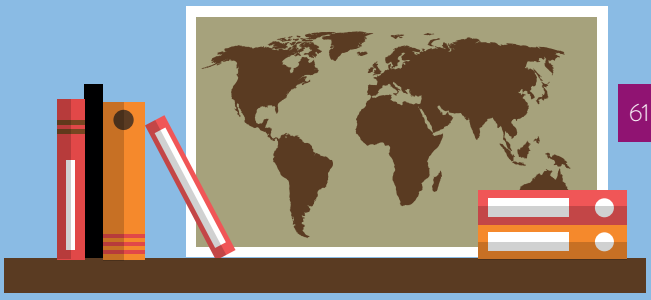
The Sad Truth about Corporate Password Practices is a blog from Neicole Crepeau of **OneLogin.**
CLICK HERE to read it.

Cat 6A – A Bright Future Ahead is a blog from Mark Mullins of **Fluke Networks.**
CLICK HERE to read it.



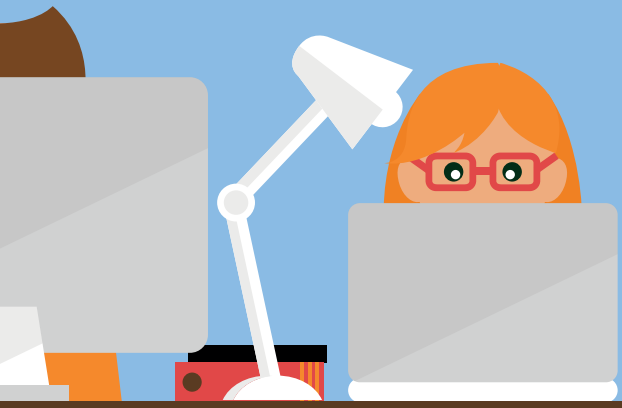
Realizing the Power of Enterprise Data is a report from **Veritas** that reveals that companies see an average return of $2.10 for every $1 they invest in improving data management.
CLICK HERE to obtain a copy.

Excel Networking Solutions has a comprehensive range of white papers written by its technical experts.
CLICK HERE to access them.



The **Zscaler** State of Digital Transformation Research 2019 study aimed to understand where companies are with their digital transformation journey.
To download a copy **CLICK HERE.**

Comparing the Severity of IT Service Outages is a blog by **Uptime Institute's** Andy Lawrence.
CLICK HERE to read it.



NCC Education turns to M247 for IaaS

NCC Education, a provider of globally recognised business and computing qualifications, has turned to M247 for infrastructure as a service (IaaS).

Governed by the Office of Qualifications and Examinations (Ofqual), NCC Education needs to comply with best practice recommendations and ensure that it has a sound business continuity and disaster recovery plan in place.

With an ageing IT infrastructure, NCC Education decided it was time for an upgrade and worked with M247 to roll out IaaS as a shared managed service.

NCC Education now takes care of its own applications and servers, while M247 provides and manages the infrastructure and firewall.

R&M provides infrastructure for world's largest airport in Istanbul

Istanbul Grand Airport (IGA), the largest airport in the world, is the first airport to be fully digitised and receive a Tier 3 data centre technology certificate. On completion, the state-of-the-art airport will measure 76.5 million m². The new airport will have an annual passenger capacity of up to 200 million.

The airport's mission critical airport data centre measures some 4,000m² and houses some 6,000 servers. R&M has provided some 90,000 RJ-45 ports and cabling guaranteed to last at least 25 years and remain unconditionally reliable.

In the first phase of construction, 5,400km of copper cabling and 3,270km of fibre optic cabling were installed, as well as fibre optic distribution cabinets, patch panels as well as 115,000 connector ports.

To accommodate the vast number of connections required and support changes going forward, a fibre optic management platform was chosen featuring the world's highest connection density of up to 120 ports per rack unit. Management of the entire cabling infrastructure is centralised and automated.

Colt Data Centre Services expands its operation in Japan with Inzai 3 data centre

Colt Data Centre Services has announced its latest data centre in Japan – Inzai 3 – which upon completion in Q4 2020 will be the company's largest data centre in the country.

The facility is constructed within the Inzai campus, which will see the entire site of 30798m² reach its build capacity. Inzai 3 is a 27MW hyperscale facility with 8,000m² of server space. The latest enhancements to the design of the facility will be to the data halls, which will now be 1,000m² each in response to customer demand for larger data halls, which allows for the optimisation of space efficiency and requirement for higher density compute.

Inzai 3 is the largest facility currently under construction in the global Colt DCS portfolio in the APAC region. The data centre will be based across four floors, eight 1000m² data halls, with a floor dedicated to storage, electrical and HVAC resources, as well as a mezzanine floor for offices and workspaces.

Inzai 3 employs the latest in construction techniques to nullify the effects of any seismic activity in the region. It will sit on a bed of springs capable of holding 125 tonnes per m², isolating the whole building from any seismic and allowing it to move as one, rather than to sway. The result is a substantial reduction in the impact of any movement, protecting the building, customer hardware and staff on-site.

PROJECTS & CONTRACTS IN BRIEF

Eurofiber has significantly upgraded its point of presence (PoP) in the maincubes AMS01 colocation data centre in Amsterdam Schiphol-Rijk. The Eurofiber presence at the maincubes AMS01 data centre has now been extended by a DWDM PoP, adding to maincubes' already fibre dense connectivity and extensive bandwidth options.

Epsilon has been selected by PT Visionet Data Internasional (VisioNet) to deliver its Direct Cloud Connect solution.

Arqiva has been selected by UK Power Networks to provide a new state-of-the-art Broadband Global Area Network (BGAN) M2M solution for its secondary Supervisory Control and Data Acquisition (SCADA) network.

Openreach, the infrastructure division of BT Group, is deploying the ADVA FSP 150-GO102Pro Series to enable mobile network operators (MNOs) to roll out small cell services throughout the UK.

Keep on keeping on

Andrew Stevens continues to work tirelessly to improve training and skills development provision within the enterprise and data centre network infrastructure sectors. Rob Shepherd recently caught up with him to find out what's been happening in his world and why 2019 is shaping up to be a landmark year

RS: I last interviewed you seven years ago for Inside_Networks. Lots of things have changed in the intervening period, so what has been the standout event and why?

AS: The standout event for me personally has been the launch and adoption of the Certified Network Infrastructure Installer (CNCI) and the support it has received. Ironically, it was 2012 that kickstarted the CNCI and many people and organisations questioned my sanity – many shared with me their view that I wouldn't succeed and, of course, there were also those that simply didn't want it to succeed. I am grateful to the six installation companies that shared my vision and supported the CNCI from the very start – LMG, Computacenter, Blackbox, Excel IT, Redstone (now ExcelRedstone) and NG Bailey.

I think that the CNCI project demonstrates that there are no quick fixes and we need to be looking 10 years ahead to shape what we want our industry to look like in the future. A lot of people have done very well out of the sector and the one thing that 2012 taught me was that we should all be looking to leave a legacy – a thriving industry that is good to work within, one that is well structured, professional and full of opportunity.

RS: So, is the network infrastructure sector in a better state of health than it was in 2012? If so, in what ways?

AS: It's in a much better place than it was in 2012, but we still have a long way to go. We are making progress and people are coming together and beginning to understand that we must continue to professionalise the industry and invest in it for the future.

The convergence of new technologies and the ever-increasing reliance on network cabling provides tremendous opportunities for everyone. As digital audiovisual, security, LED lghting and the impact of power over Ethernet (PoE) continue to penetrate the market, we will need to develop new skills and continue to improve the quality of the work we do.

I see a 50/50 split in the industry when it comes to ensuring that organisations have the right skillsets. Put simply, 50 per cent invest year on year and the other 50 per cent continue to wing it and get away

with it. We still see companies out there happy to be in the 'race to the bottom' when it comes to pricing of projects and there are companies in the industry that don't even have their own set of standards, which amazes me in 2019. However, it is improving.

RS: What excites you about your professional life at the moment?

AS: I'm loving the fact that we are achieving what most people told me we couldn't. I'm excited to see that the plans we put together and have worked on since 2012 are really having an impact. I'm lucky to have a great team around me, and I'm grateful for their loyalty, hard work and support – we still love what we do and enjoy every day.

I am as determined today as I was when I first started with CNet Training to help professionalise the industry and have it treated as a credible industry, allowing every company to be able to charge a fair rate for the quality services they deliver.

RS: You have continued to promote the benefits of qualifications, certifications and accreditations. Are people listening and responding positively to your message?

AS: I think they are listening in the most part and responding positively, but I think there is still such a lack of understanding about what an actual qualification is, what the different qualification levels equate to, how they differ to certifications and how they should be used together.

More importantly, there is still a lack of understanding surrounding the benefits that a skilled, knowledgeable and well trained individual will bring to an organisation – it drives profit and it goes straight to the bottom line.

This lack of understanding around qualifications is not helped by misinformation, which is being promoted across some parts of the industry. However, the sector is coming of age and now that government departments are taking a real and detailed interest and enforcing government policy across all sectors – Level 3 qualifications are the minimum standard – soon there will be no room for non-compliance.

> 'I hope that the industry takes responsibility for itself, stops ignoring the indicators, stops pushing against government policy with regard to education and starts to professionalise its entire approach.'

RS: Given its vital role as the fourth utility, is it time that only those with appropriate training and skills were able to work on network infrastructures?

AS: We have a real challenge over the next 2-3 years – self-regulate or be

'I think that the CNCI project demonstrates that there are no quick fixes and we need to be looking 10 years ahead to shape what we want our industry to look like in the future.'

regulated. This statement is not made lightly and comes from the fact that history tells us that as an industry matures and becomes more critical to the economy or society, and as we become more reliant upon its services, then authorities take a much keener interest.

The Cabinet Office manages the UK's critical national infrastructure (CNI). It has 13 categories, one of which is communications, and in this instance it is jointly controlled by the Department for Digital, Culture Media and Sport / Department for Business, Energy and Industrial Strategy, and on page seven data centres are listed.

In recent meetings with the compliance and legislation advisory group within the Department for Digital, Culture Media and Sport, real concern was expressed with regard to what it calls the 'spaghetti syndrome', and we have all seen the racks they are talking about.

They fully understand that the CNI is only as good as its weakest link, and if that weakest link is a spaghetti cabinet in a data centre then they will act. They are currently reviewing our sector and how we operate, how we self-regulate, our adherence to best practice, codes and standards, how we recruit and whether or not we can effectively support the CNI.

RS: Do you think trade associations have an important role to play and are they doing enough to promote the sector and make it a better place to operate in?

AS: I think they could have an important role but largely they have failed to deliver on the issues that the industry has. It has been left to organisations such as CNet Training to step up and attempt to solve these issues.

A good example of this is the new Network Cabling Installer Apprenticeship. This has taken myself and my team over five years to achieve – it will have a lasting impact and is for the benefit of the entire industry. Surely a trade association should have led this initiative.

RS: What more can be done to encourage more women to join the sector and have you noticed any positive changes?

AS: There is a lot more that can be done to encourage more women into the sector. We must explain what the sector does and the variety of opportunities within the industry.

We seem hellbent on using pictures of people installing and testing cable when we describe the industry, but that is just one job role within a huge sector. What about all the other roles such as sales, human resources, marketing, accounting, health and safety, project management, design and logistics? We seem to forget that the structure of our businesses is very similar to others, it's simply the product that is different.

RS: Likewise, what would you say to anyone, regardless of gender, with science, technology, engineering and mathematics (STEM) skills, about why they should consider a career in the sector?

AS: I would say that even with the issues we currently have within the sector it is still a great industry to work in.

I have mentioned a number of the issues this sector faces, but all that means is that there are great opportunities for those individuals with the right ethics, attitude, appetite and skills to excel. Individuals and organisations that put themselves on a solid and professional path will succeed.

Opportunities for success, career progression, travel and personal development are almost endless. Technology will continue to evolve at pace and opportunities for business diversity and growth will be dramatic. We need to be able to explain the breadth of the sector and all the variety of roles within it, encouraging people that building the fourth utility is exciting, challenging and a huge responsibility.

RS: What will be the next big 'game changer' and where do you hope the network infrastructure sector will be in five years' time?

AS: I think there will be a number of 'game changers' within the industry over the next few years, some driven by external factors and some internal factors.

With regard to external factors, I think the arrival of 5G and the opening up of the BT network will create tremendous opportunities. I think the increase bandwidths and requirements for super low latency for 5G will put pressure on the data centres and the network in general. It will also potentially attract a large labour pool from the internal network on to the external network but, of course, these things go around in cycles. I think the requirements of end users for everything to be smart – whether that's buildings, roads or cities – will create opportunities and challenges and we must be careful that the hype doesn't kill the reality.

I think the game changer regarding internal factors that will shape our sector will be around the previously mentioned topic of whether regulation is introduced. This is entirely in our hands and within our control – currently we can set our own destiny and map the future direction of the industry but whether we do is another matter. I joined the industry in the late 1980s and, like most, didn't really think I would be in it for the long-term. However, it became clear to me very early on that this industry was here to stay but that it needed to adopt best practice, structure itself so that it could be self-sustaining, self-defining and create opportunities for all.

I hope that the industry takes responsibility for itself, stops ignoring the indicators, stops pushing against government policy with regard to education and starts to professionalise its entire approach. Steps need to be taken to ensure that the network cabling sector becomes an industry that others look at and say 'wow – they have it right – it must be great to work for those companies'.

Because of the technology advances, we have an amazing opportunity to put the past behind us and move up the food chain very fast. Rather than being the 'cabling company' at the bottom of the pile, being paid less and last, we can be the 'technology partner' that provides you with everything you need to operate all of your IT systems, manage your buildings, keep you safe and even entertain you. I hope in five years' time that we think of ourselves as highly skilled, professional technology companies and individuals. ■

R&M

R&M is focusing on providing broadband network operators with greater planning freedom. The Optical Distribution Frame (ODF) with newly developed PRIME modules, for example, allows fibre to the home (FTTH) suppliers to initially equip their networks to suit local requirements and extend them as required later – following the pay as you grow principle. This makes it possible to plan with manageable investment costs. Network operators can quickly react to local FTTH demand and technical progress, and scale broadband networks to suit requirements.

PRIME is a high density distribution platform that can be assembled, adapted and extended as separate blocks. At maximum capacity, PRIME modules can connect up to 5,376 optical fibres in one ODF. R&M's Polaris boxes are also helping FTTH network operators to connect the growing number of fibre optic cables in tight cramped spaces to supply buildings – from single family homes to extensive residential estates – with broadband connections.

To find out more **CLICK HERE.**
rdm.com

Rittal and Innovo Cloud

Rittal and Innovo Cloud have created digital twins, as well as the necessary infrastructure ecosystem for connected Industry 4.0 scenarios. Their joint offering comprises ready to go edge infrastructure, cloud native platform services and direct high speed cloud connections to data centres in Frankfurt.

By 2020 there will be around 20 billion connected sensors and end points, delivering the data needed to create digital twins of physical equipment and systems. High performance, decentralised infrastructure comprising automated edge applications, in conjunction with cloud native platform services from Innovo Cloud, enable industrial players to model and manage their digital twins across the entire value chain – supported by the ultralow latency needed for real time processing in manufacturing use cases.

The shared Rittal and Innovo Cloud ecosystem gives industrial players access to an edge data centre within a matter of weeks with the corresponding, customer specific platform and service modules – guaranteeing reliable IT operations. Customers can therefore be sure of a one stop solution to their individual needs, with all the necessary components for empowered edge computing as a basis for Industry 4.0 applications.

To find out more **CLICK HERE.**
www.rittal.co.uk

Chatsworth Products (CPI)

As organisations place their assets into data centres, IT managers are tasked with delivering increasing levels of high performance, while still retaining optimal efficiency levels – working hard to cut costs and meet demanding deadlines.

To overcome these challenges, Chatsworth Products (CPI) has re-introduced an efficient cabinet solution – the-EF-Series EuroFrame Gen 2 Cabinet – now with UK stock availability for guaranteed fast delivery.

The EuroFrame Gen 2 cabinet is designed to minimise deployment time and resources by offering a quick and easy to install storage solution, whilst still providing the high performance associated with the CPI brand. The evolving requirements being placed on European data centre owners and operators are leading them to seek increased levels of performance and efficiency, while keeping expenditure increases to an absolute minimum. EuroFrame Gen 2 cabinets address these requirements perfectly.

Along with its matching airflow, cable and power management accessories, this cabinet provides a reliable and cost effective solution for today's modern data centre.

To order your EF-Series EuroFrame Gen 2 Cabinet or to find out more **CLICK HERE.**

www.chatsworth.com

Excel Networking Solutions

Excel Networking Solutions has launched an A5 Product Guide specifically to showcase the wide range of products that are currently available in Australia through its distributor, L&H.

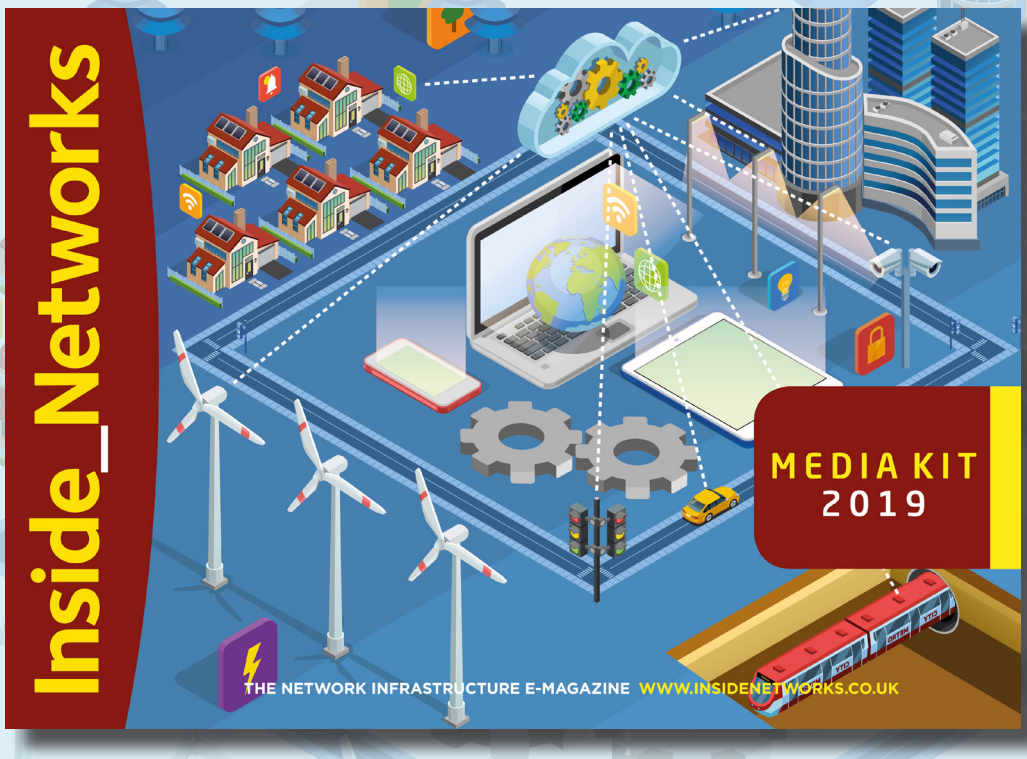
The product guide clearly shows the full range available and provides a photograph, an overview, features and part number information for each of the products available in the range. All the products comply with the ACMA requirements and this is reflected on the packaging, with the addition of the ACMA logo.

This handy A5 sized catalogue is a great tool for installers, consultants and end users, particularly those new to the Excel brand. With the turning page edition, users can flick through the product guide just as if they were reading a printed brochure.

CLICK HERE to download a copy of the Excel Australia Product Guide.

www.excel-networking.com

All you need to know



CLICK ON THE COVER TO VIEW THE 2019 MEDIA KIT

Opportunity knocks

Nick Sacke of Comms365 examines the benefits of integrating intelligent building automation with the internet of things (IoT) to create a solution that really delivers

The topic of smart buildings has dominated IoT conversation since 2015, with analysts discussing how building owners will be able to leverage IoT technology to deliver a more efficient and monetisable structure, coupled with greater occupant satisfaction. As a market estimated to reach $31.74bn by 2022, this anticipated growth highlights an investment opportunity, however, the approach and outlook that building owners adopt when implementing these changes will determine what business benefits and efficiencies they will see.

COST EFFECTIVE

Thanks to the availability of lower cost IoT devices that, in their millions, can harvest data at scale, integration of local area and wide area wireless communication networks to relay sensor data, enhanced data processing via cloud based data analytics, and mechanisms to enable action from insight, the design and operation of commercial and industrial buildings has now changed. So what are the opportunities that smart building technology can offer and how can the barriers to adoption be overcome to ensure the growth of the IoT market continues at its predicted rate?

One of the most significant barriers to adoption within the smart building market is cultural. We have become used to the fact that our movements are constantly being observed by CCTV, however, when the subject of big brother is raised, the majority are of the opinion that 24/7 monitoring makes people very nervous, especially when it comes to the issue of data protection.

'Technology is shaping the future of commercial buildings, with an increase in the availability of highly customisable features that will provide individualisation and personalisation of an environment for users.'

MADE TO MEASURE

In order to realise the true benefits that intelligent building technology can provide, a wide range of data measurements need to be taken and this could cause concern for those who are apprehensive about having their personal data recorded. For an environmental monitoring solution, for example, information such as energy usage, humidity, carbon monoxide and acoustics needs to be monitored.

But what happens to that data, and who owns it? Many do not understand how smart technology can have a positive impact on elements such as energy usage, not just in terms of lowering bills but in turn reducing the impact on the environment and many more subsequent benefits. Without this insight, the automatic response to new technology can be nervousness and scepticism. Education is therefore key to overcoming these cultural concerns and by encouraging collaboration between all parties at an early stage of the plans, the benefits can be clearly explained.

RATE OF RETURN

The potential upfront cost of investing in or retrofitting IoT technology to an existing building can be a perceived barrier. In the majority of cases, once installed, running these buildings becomes increasingly cost effective for the building owner with a rapid return on investment achieved as utilities and other costs are made more efficient. For example, IoT technology can help to lower the maintenance quotient of a building by monitoring key parameters such as water usage, temperature and movement of people. With this approach, maintenance can be performed swiftly when it is required, rather than waiting until a system breaks down.

With concerns regarding energy consumption and climate change now a global priority, the energy optimisation that IoT technology offers to building owners is a major driving factor in its popularity. For example, IoT technology can help to identify the causes of energy spikes and, in turn, result in an overall decrease in energy bills.

NUMBER CRUNCHING

By interfacing IoT enabled devices to a building management system, key data parameters can be used to anticipate needs, take the requisite action and control the entire process from end to end by, for example, turning the air conditioning on or off when required without the need for human interaction. Whilst this involves monitoring a level of personal information, with data protection legislation in place individuals cannot be identified but can still play their part in the smart building measurement model.

Furthermore, the lower costs of running building utilities can be passed on in part through lower fees to the customer, boosting appeal and the customer experience. Therefore, identifying the value in IoT, and understanding the ways in which these technologies can deliver potential efficiencies and monetise additional services, can play a big role for many building owners in justifying the initial capital investment.

COMING UP

There are many new developments that may stir the market of intelligent buildings, including wafer thin sensors that can be placed unobtrusively in challenging areas, robotic assistants that are able to 'walk' with you around a facility, tiny drone surveillance of perimeter security, and many, many more. These new developments seem to be focused on a single main objective – the improvement of operational processes with the attendant commercial impact and increase in user satisfaction.

With the ability to work from just about anywhere, building owners are under pressure to provide a service and environment that people want to work and benefit from. Due to this, workspaces are now becoming more 'aware' through an ecosystem that allows buildings to flex

dynamically to the requirements of users, whether they are temporary or permanent, through the convergence of IT and operational technology, energy and space management.

WORKING TOGETHER

Technology is shaping the future of buildings, with an increase in the availability of highly customisable features that provide individualisation and personalisation of an environment for users by profile, bringing together multiple ergonomic parameters that can be flexed at will. From technology that matches the seating settings in your car to your desk chair, individual temperature zones by desk, to structural integrity that tracks how a building responds to ambient vibrations, this myriad of technologies will work together to provide a more productive, pleasing and personalised environment for users. ■

NICK SACKE

Nick Sacke is head of products and IoT at Comms365 and has over 30 years of telecommunications experience, ranging from sales to director roles. He holds product and commercial development responsibilities for a set of innovative, market leading mobile data, bonding, fixed line communications and IoT service solutions for Comms365.

08:25

WE HOPE YOU HAVE ENJOYED

Inside_Networks

COMING UP IN AUGUST 19'S ISSUE:

SPECIAL FEATURES:
> MODULAR DATA CENTRES
> SECURITY AND ACCESS CONTROL

TO FIND OUT MORE ABOUT PROMOTION WITHIN THESE FEATURES CLICK HERE

- > ALL THE LATEST NEWS, VIEWS, COMMENT AND ANALYSIS
- > ARE THERE ANY GENUINE ADVANTAGES IN USING A PREMIUM COPPER CABLING SOLUTION OVER A LOW COST ALTERNATIVE?
- > THE REASONS BEHIND THE RISE OF MICRO-MODULAR DATA CENTRES
- > HOW PHYSICAL SECURITY IS BEING TAKEN TO THE EDGE
- > HOW A CONNECTED WORLD IS BEING CULTIVATED THROUGH EMERGING TECHNOLOGY
- > TIM CLOGG GOES UNDER THE SPOTLIGHT
- > MOVES, ADDS AND CHANGES IN THE CHANNEL
- > NETWORK INFRASTRUCTURE CASE STUDIES FROM AROUND THE WORLD
- > THE LATEST PRODUCT, SYSTEM AND SERVICE DEVELOPMENTS