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AT RISK FROM FIRE?





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6

**ROB'S BLOG**

Heat map

9

**NEWS**

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



14

**MAILBOX**

The pick of the recent emails to Inside\_Networks



17

**QUESTION TIME**

Industry experts examine the potential causes of fire in data centres and what measures should be taken to reduce the risk

30

**SUSTAINABLE NETWORK INFRASTRUCTURES**

Mark Yeeles of Schneider Electric looks at why the edge provides unique sustainability challenges



35

**SUSTAINABLE NETWORK INFRASTRUCTURE SOLUTIONS**

State-of-the-art sustainable network infrastructure solutions profiled

3

FOR A FREE  
SUBSCRIPTION  
TO

Inside\_Networks

[CLICK HERE](#)

38

**SUSTAINABLE NETWORK INFRASTRUCTURES**

Carsten Ludwig of R&M explains why a more sustainable approach to power, water and raw materials is vital

54

**QUICK CLICKS**

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

42

**CHANNEL UPDATE**

Moves, adds and changes in the channel

56

**PROJECTS AND CONTRACTS**

Case studies and contract wins from around the globe

44

**DCIM, AIM AND IIM**

Alberto Zucchinali of Siemon takes a fresh look at AIM systems and the benefits they provide to data centre physical layer management



48

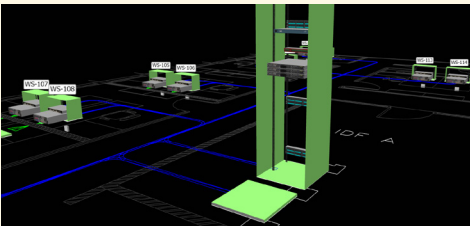
**DCIM, AIM AND IIM SOLUTIONS**

A selection of the very best DCIM, AIM and IIM solutions currently available

58

**SPOTLIGHT**

Rob Shepherd talks to Bruce Owen about his life and career, and gets his thoughts on some of the big issues affecting the data centre sector



62

**PRODUCTS AND SERVICES**

The latest network infrastructure products, systems and services

50

**DCIM, AIM AND IIM**

Herman Chan of Sunbird Software explains how DCIM software can simplify remote edge site and IDF organisation

67

**FINAL WORD**

Wendy Shearer of Pulsant examines why the edge is critical to the UK's regional regeneration

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# In the line of fire

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Data centre fires are a rare occurrence. In fact, they surprisingly uncommon given the sheer concentration of electrical equipment these facilities contain.

Where there is a fire risk it must be mitigated though. While most data centres should have an effective fire detection and suppression system in-situ, sometimes there is a blasé attitude to making sure that preventive measures like good housekeeping are given the attention they deserve. In addition, routine inspections, maintenance and equipment checks should be carried out to prevent the potential for fire – but often aren't.

To identify the potential causes of fire in data centres and how likely it is that such an event could occur, Inside\_Networks has asked a panel of industry experts to discuss the issue. They also look at what measures should be taken to reduce the risk.

Sustainable network infrastructures are a constant industry discussion point and in this issue we have two articles on the subject. As demand and opportunity are driving growth at the edge, Mark Yeeles of Schneider Electric looks at why it comes with unique challenges for operation, management and sustainability. He's followed by Carsten Ludwig of R&M, who explains why a more sustainable approach to power, water and raw materials is vital.

We also have a special feature dedicated to the subject of DCIM, AIM and IIM. Herman Chan of Sunbird Software explains how modern DCIM software can simplify remote edge site and intermediate distribution frame (IDF) organisation. Joining him is Alberto Zucchinalli of Siemon, who takes a fresh look at AIM systems and the benefits they provide to data centre physical layer management.

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

## Rob Shepherd

Editor





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## 81 per cent of UK & Irish data centre businesses claim the energy crisis will impact net zero plans

81 per cent of business leaders at UK and Irish data centres say the energy crisis will impact their organisation's ability to meet its emissions reduction plans, according to research published by Schneider Electric. Of that figure, around half say they are delaying scheduled investment in sustainability and net zero plans (49 per cent).

Decarbonisation helps businesses reduce energy use and lower energy costs at a time when energy prices remain volatile. Yet 40 per cent say they now have more immediate business challenges to meet, while 43 per cent claim that emission reduction targets are no longer an issue for their stakeholders. More than one in five (22 per cent) of these firms claim that taking practical action to meet targets is difficult.

The survey of more than 1,500 large organisations revealed that business leaders still recognise the importance of working to emissions reduction targets, as nearly one third (32 per cent) of data centre business leaders believe that climate change and net zero ambitions will become more of a priority over the next three years. Only a small minority (11 per cent) believe that national net zero commitments will be diluted in that time.

'Business leaders tell us that the energy crisis should be seen alongside the many other challenges they have faced over the last 12 months including economic pressures, cybersecurity and skills shortages,' said Mark Yeeles, vice president of Schneider Electric's Secure

Power division in the UK and Ireland. 'Yet our research suggests that some of the UK and Ireland's data centres are kicking the carbon emissions can down the road, as a result of the energy crisis. As fears grow about progress against global commitments made under the Paris Agreement, and the UK's Climate Change Committee warns of a lack of progress on emissions cuts, the UK and Ireland need data centres to play their part and stick to their net zero and emissions reduction targets.'

The survey also revealed that 32 per cent of data centre managers believe that energy prices will fall over the next three years, while 71 per cent think their organisation will still be addressing the energy crisis in 12 months' time. Yeeles urged data centres to re-engage with their emissions reduction ambitions and said, 'It's not all doom and gloom. As our research shows, business leaders still believe in their climate change ambitions – they simply need to push the subject back up the corporate agenda.'

He concluded, 'The technology required to help businesses decarbonise is already available and the return on investment for these solutions has never been more attractive, with payback periods measured in months rather than years. Organisations still have time to meet their net zero commitments by understanding and addressing energy use, investing in renewable energy and energy saving technology, and embedding sustainability and carbon reduction targets in their business plans.'





## North American data centre construction rises 25 per cent to record high in first half of 2023

Demand for data centre space in North America overshadowed economic uncertainty and concerns around power availability in the first half of the year. As a result, construction of North American data centres is at an all-time high, in part due to the continued growth of artificial intelligence (AI), according to CBRE.

CBRE's latest North American Data Center Trends Report found there is 2,287.6MW of data centre supply currently under construction in primary markets, with more than 70 per cent already preleased. At the same time last year, there was 1,830.3MW under construction. Companies are leasing space

up to 36 months in advance of construction completion in anticipation of future demand and to secure data centre space at current pricing.



‘Data centre construction is driven by strong demand from all users, including AI, hyperscale and enterprise,’ said Pat Lynch, executive managing director at CBRE. ‘New and existing uses of AI cases grew tremendously in the first half of the year, and we expect demand to remain strong with AI driving leasing opportunities in the second half of the year.’

## Proximity Data Centres acquired by nLighten

Proximity Data Centres has been acquired by nLighten, a pan-European edge data centre platform with 26 data centres, 53MW of potential capacity and 130 employees. nLighten has grown quickly and established itself in the three largest data centre markets in Europe – Germany, France and the UK.

As a mature market with large economic regions that can benefit from more locally distributed data centres, the UK is a logical choice for nLighten's expansion. Proximity's network of high performance data centres, strong reputation, agility and track record of entering local markets, position the

company well for capturing the increasing shift to the edge across the country. Given the evolving standards for data sovereignty in Europe, nLighten plans to keep the operational management of its

data centres in the country and places great emphasis on its identification with the UK market.

‘The acquisition of Proximity brings us a big step closer to our goal of creating the leading pan-European edge data centre platform,’ said Harro Beusker, co-

founder and CEO of nLighten. ‘Proximity's edge data centres are a great fit for our portfolio, and the existing management team, staff and assets provide a solid foundation for our ambitions in the UK.’



## Vantage Data Centers to continue deploying renewable generator fuel

Vantage Data Centers is continuing the deployment of hydrotreated vegetable oil (HVO), a renewable fuel to replace conventional diesel fuel in generators. The company will roll out HVO in several of its largest markets in North America and Europe, Middle East and Africa (EMEA).

Initially deployed as a pilot at Vantage's Cardiff campus in 2022, the company's deployment of HVO as an alternative to diesel fuel yielded progress toward its carbon goals, without the need for new or updated infrastructure. Vantage officially implemented HVO at its newest facility, CWL13, on the Cardiff campus and is currently working to deploy it

throughout the rest of the campus. In addition, Vantage will deploy HVO in one of its North American flagship markets, Santa Clara, California, by the end of the year.

'Making the switch to renewable diesel is one of the many ways we are reducing the carbon emissions of our operations,' said Amanda Abell, senior director of sustainability at Vantage. 'We look forward to continuing the rollout of HVO at our campuses across North America and EMEA, where available, in addition to the other programs we have in place to reach our sustainability targets.'



## BSRIA research finds Excel is the UK's most popular cabling brand

BSRIA's World Market for Structured Cabling report has found that Excel Networking Solutions has increased its UK market share to 26 per cent, making it the market leader in 2022. The Excel brand is a premium performance end to end infrastructure solution backed by a comprehensive 25 year warranty and is supported by independent third party verification.

Andrew Percival, Excel's managing director commented, 'We're delighted



to see that Excel has continued to grow. As well as keeping the number one position in the market we have increased our share by five per cent against the previous year. Key growth drivers for us were some large project wins and high levels of product availability, despite ongoing supply chain challenges elsewhere in

the market. We continue to provide our customers with the best products backed by exceptional service.'

## Frontier AI Taskforce gathers momentum to advise UK government

Leading names from industry and national security are set to advise the UK government on the risks and opportunities from artificial intelligence (AI), as the country's Frontier AI Taskforce gathers momentum and appoints a team of experts to accelerate efforts. The group will pay particular attention to systems which could post significant risks to public safety and global security, and it will be tasked with researching AI safety, identifying new uses for AI in the public sector and strengthening UK capabilities.

Yarin Gal has been announced as the first Frontier AI Taskforce research director, while David Kreuger will be taking a

consultative role. They will work together to build a team to investigate AI risks in the run up to the summit. The Frontier AI Taskforce is backed with £100m in government funding and so far has recruited a team of seven experts to guide its work, with plans on recruiting more over the coming weeks.

Sridhar Iyengar, managing director for Zoho Europe, commented, 'AI can act as a useful business tool, adding huge value when used correctly by offering ways to increase efficiencies such as business forecasting, fraud detection and sentiment analysis. However, there are still concerns around safety and how the ethical use of AI is promoted and governed.'



Sridhar Iyengar

### NEWS IN BRIEF

EPI has appointed USDC Technology as its Vietnam partner for the TIA-942 audit and certification program. This strategic partnership represents a significant leap forward for the Vietnamese data centre industry. USDC Technology will take advantage of EPI's expertise to help Vietnam data centres design and build facilities that meet the highest quality based on the TIA-942 standard.

The Continental Automated Buildings Association (CABA) has changed its name to the Association for Smarter Homes & Buildings (ASHB).

Iceotope has achieved Great Place to Work certification. After a thorough evaluation of its workplace practices, policies and employee feedback, Iceotope has been acknowledged as a company that values collaboration, growth and employee wellbeing.

BCS, The Chartered Institute for IT, and the Digital Poverty Alliance (DPA) have signed a memorandum of understanding, with the joint aim of ending digital poverty in the UK by 2030. Digital poverty affects millions across the UK, with around 1.7 million households (six per cent) without home internet access and approximately 10 million adults (20 per cent) lacking foundational essential digital skills.

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# We need big picture thinking w

## Hi Rob

I'm worried about the future. If we don't act when it comes to environmental concerns and sustainability, our children's future will be very different from the one we envisage for them. The planet will still be here, but our culture and civilization will be gone forever.

The young highlight issues surrounding climate change and the environment, but they also contribute to the problem. They are huge users of electronic communication, storing photos and videos in the cloud and using social media. Our culture increasingly depends upon data centres but data centres are also major contributors to the problem.

To illustrate the point, The Irish Times recently reported that Patrick Bresnihan of National University of Ireland told the Oireachtas Committee on the Environment and Climate Change that existing data centres currently used 11 per cent of grid capacity. He also said that this will rise to almost 30 per cent of overall capacity by 2030 and if all the other data centres proposed for Ireland are allowed, their energy use would comprise 70 per cent of the national grid's capacity. No wonder new data centre builds are being banned in Dublin to help ensure there is sufficient power for homes in the area.

The only way to tackle this growing problem is through a lifestyle change. At one time, recycling was rarely done, but now it's a way of life and we need to think about sustainability in this way too.

Organisations must stop paying lip service to sustainability and issuing

meaningless policies. They must think about the end point before they begin. They need a long-term vision, not a short-term plan. If we do not change, the environment will make us change and this change will be way outside of our control.

I joined the uninterruptible power supply (UPS) industry in 1988. Then, in the early days of what we now call data centres, it was standard practice to maximise the data centre's electrical infrastructure and then fit the largest possible UPS to prevent outgrowing it. This approach was understandable at the time but wasted huge amounts of electricity and materials like copper.

Today, modular UPS cabinets capable of supplying maximum power to the data centre are installed but are only fitted with



# When it comes to sustainability



the number of UPS modules needed to support the actual load. Modules are added if the load increases. Such scalable, flexible, pay as you grow solutions ensure optimal operating efficiency and waste nothing.

Some data centres are seriously considering ‘running hot’ and operating at 27°C rather than 20°C. What a great idea. The UPS and servers in the data hall will happily operate at these temperatures and this will save significant amounts of energy and water needed for cooling. Unfortunately, valve regulated lead acid (VRLA) batteries can’t operate at 27°C without almost halving their useful working life but lithium iron phosphate (LiFePO<sub>4</sub>) batteries, which can operate at higher ambient temperatures without impacting their design life, could be used. LiFePO<sub>4</sub>

batteries cost twice as much as VRLA batteries, but they last twice as long.

Data centres and their electrical infrastructure have typical design lives of 30 years but almost all UPS have a design life of about 10 years and use 10 year design life VRLA batteries that will all need replacing at least twice in a data centre’s life. Why not install a UPS with a design life of 30 years to match the design lives of the data centre and never need to replace it?

Artificial intelligence (AI) is about to accelerate changes. I liken AI objectors to the Luddites who smashed machines during the Industrial Revolution. Sure, AI will take jobs, but other jobs will be created. Our culture will adapt but what we must do is look at the big picture and recognise how increased use of technology impacts the environment through increased energy usage. And we must act. Maintaining the future prospects of our civilisation and our culture can only be achieved through some big picture thinking when it comes to sustainability.

**David Bond**  
Centiel

### Editor’s comment

Some excellent points from David and there’s no doubt that some of the short-term fixes to the climate change issue are akin to rearranging the deckchairs on the Titanic. When it comes to data centres, extending the design life of infrastructure components makes sense and advances in UPS technology can also reduce the cost of future replacement parts.



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# Burning issue

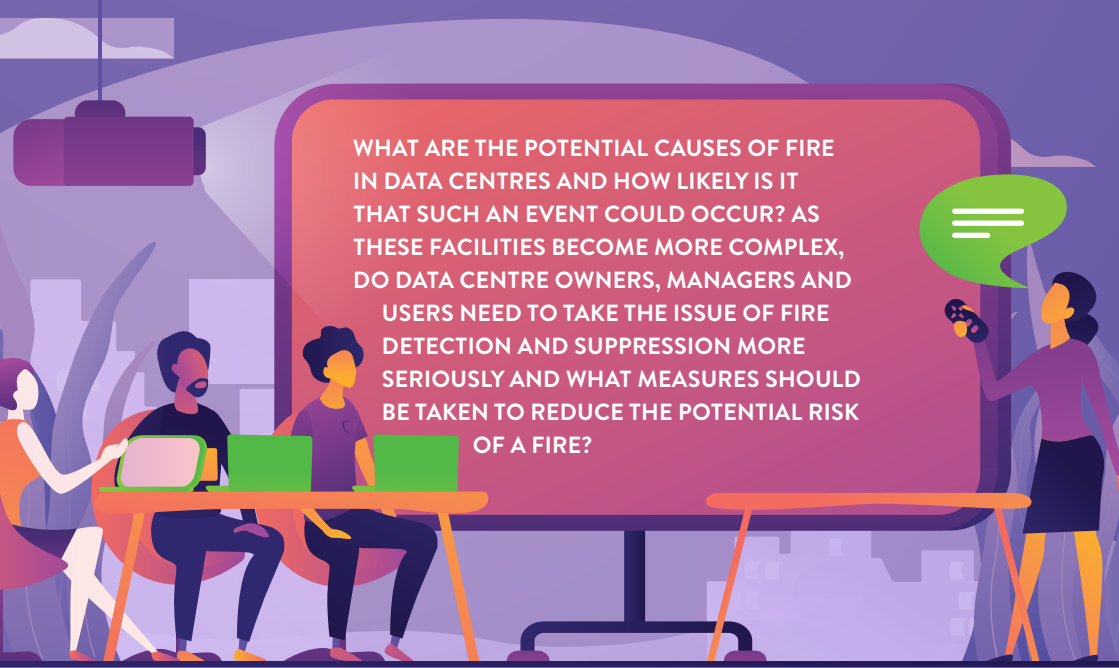
Although thankfully uncommon, fires in data centres pose a genuine risk. [Inside\\_Networks](#) has assembled a panel of industry experts to examine whether this issue being taken seriously enough and what preventative measures should be taken

▶ It stands to reason that where there is electricity, there is also the potential for fire. Data centres are no exception to this fact and yet despite being full of equipment and components that are capable of both starting and increasing the severity of a fire, such instances are remarkably rare.

Uptime Institute identified 14 publicly reported, high profile data centre outages caused by fire or fire suppression systems since 2020. Earlier this a data centre operated by Maxnod suffered a devastating fire, bringing the French facility offline

and severely damaging infrastructure. Likewise, in 2022 a fire broke out at the SK C&C data centre in South Korea, which brought down services for internet company Kakao.

These two are unlikely to be the last cases of fires in data centres. So, in order to discuss whether the sector needs to take the issue of fire detection and suppression more seriously, [Inside\\_Networks](#) has assembled a panel of experts to offer their views and explain the measures should be taken to reduce the potential risk.



WHAT ARE THE POTENTIAL CAUSES OF FIRE IN DATA CENTRES AND HOW LIKELY IS IT THAT SUCH AN EVENT COULD OCCUR? AS THESE FACILITIES BECOME MORE COMPLEX, DO DATA CENTRE OWNERS, MANAGERS AND USERS NEED TO TAKE THE ISSUE OF FIRE DETECTION AND SUPPRESSION MORE SERIOUSLY AND WHAT MEASURES SHOULD BE TAKEN TO REDUCE THE POTENTIAL RISK OF A FIRE?



# ANDY HIRST

## MANAGING DIRECTOR CRITICAL INFRASTRUCTURES AT SUDLOWS

A week before writing this article about potential fires in data centres, my two year old microwave started smouldering due to an electronics fault. This is one of six electronic appliances in my kitchen, so when you consider what the risk is in the hundreds of data centres using gigawatt after gigawatt of electronic IT equipment globally in high density, high temperature environments, potential fire risks are a concern! As it happens, the occurrence of fires in data centres is extremely low.

Fortunately, most data centres have fire detection in at least one form or another, with a majority incorporating a multi-stage system consisting of high sensitivity aspirating smoke detection or very early smoke detection apparatus (VESDA). This basically acts as a double knock detection system and an automatic suppression system, and reduces fire outbreaks.

What is noticeable when visiting some data centres is that, surprisingly, the issues are not with the IT equipment as you might expect, but with other basic areas such as poor housekeeping. For example, cardboard and equipment stacked in areas that are restricting airflows or covering cabinet doors, alongside poor maintenance.

All the concentration goes into the mechanical and electrical (M&E) infrastructure but when was the last time the facility had its IT equipment portable appliance tested (PAT), or even just visually inspected? The very thought, no doubt,

would put shivers down some data centre manager's backs, even though it is part of the Electricity at Work Regulations 1989.

We shouldn't forget the obvious either. Human error can occur in many forms, such as people not being skilled in the work they are doing in the white space, or carrying out electrical installation and conducting hot works, as well as demonstrating complacency when coiling excessive cables under the floor and restricting cooling airflows. The potential list is endless!

Here's some food for thought on the prevention of fire in data centres – consideration should start at the design phase of a facility and preventative measures should be reviewed. An example is the segregation of certain areas such as uninterruptible power supply (UPS) battery rooms. This is even more important with the introduction of new battery technologies such as lithium-ion, where fires, even if suppression is present, are more common than in other areas. At least if the unthinkable happens, it is contained.



**'WHAT IS NOTICEABLE WHEN VISITING SOME DATA CENTRES IS THAT, SURPRISINGLY, THE ISSUES ARE NOT WITH THE IT EQUIPMENT AS YOU MIGHT EXPECT, BUT WITH OTHER BASIC AREAS SUCH AS POOR HOUSEKEEPING.'**

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# JOHN HALL

## MANAGING DIRECTOR COLOCATION AT PROXIMITY DATA CENTRES

Clearly there are potential fire risks and hazards in any environment where there is a concentration of electrical equipment. For data centres the risk of electrical faults is ever present, especially with more and more powerful racks being accommodated.

Furthermore, having multiple contractors on-site at any one time is part of daily life and the tasks they carry out could create a potential and considerable fire hazard. Ensuring there is a robust permit to work system including the use of hot works permits when carrying out potentially hazardous work, such as brazing, is therefore a prerequisite and scheduled post work inspections are vital after any work has been completed.

Dust can accumulate on equipment, leading to overheating. Regular cleaning should therefore include removing dust from surfaces including IT equipment and within the air conditioning and cooling systems. A cleaning regime should be implemented either in house or by a third-party specialist.

Fire suppression systems help support the data centre team – these are efficient in quickly suppressing fires without damaging the equipment. Likewise, the use of very early smoke detection apparatus (VESDA) aids the early detection of smoke, often via the building management system or fire alarm system, alerting staff to a potential issue before the fire has a chance to take hold.

Installing fire resistant walls, doors and other barriers will also prevent the spread of fire within a facility. The correct use of fire stopping materials where cables breach rooms will help in the reduction of the spread of fire and smoke.

Fire equipment maintenance must be integral to any data centre operating procedures. BS EN 15004-1:2019 provides a guide to the regular testing and maintenance of fire detection and suppression systems to ensure that they are always in working condition. This maintenance should only be done by a suitably competent



contractor.

Data centre owners and operators must never underestimate the importance of fire prevention by investing in detection and suppression systems, and adhering to safety procedures. The risk of unplanned downtime, loss of corporate reputation and potentially lost business are simply too high.

**'DUST CAN ACCUMULATE ON EQUIPMENT, LEADING TO OVERHEATING. REGULAR CLEANING SHOULD THEREFORE INCLUDE REMOVING DUST FROM SURFACES INCLUDING IT EQUIPMENT AND WITHIN THE AIR CONDITIONING AND COOLING SYSTEMS.'**

# RICHARD CLIFFORD

DIRECTOR OF SOLUTIONS AT KEYSOURCE

Fires can be caused by a number of different factors such as poor maintenance, electrical failures, overheating lithium-ion batteries and human error. While these are rare, they can be devastating. Rising temperatures across the UK and Europe in recent years have also brought this issue to the fore for many operators.

Fire detection and suppression systems are generally sophisticated and fit for purpose, however, power issues and outages can affect them, which can lead to overheating or fire hazards. Organisations can mitigate this by increasing fuel storage, investing in more generators as back-ups and implementing small uninterruptible power supply (UPS) systems across remote edge network locations. I would recommend that organisations:

- Ensure thorough maintenance of all critical power infrastructure by a specialist.
- Ensure any advised works from recent maintenance are reviewed and executed to reduce risk of downtime.
- Ensure black building testing is conducted to test all equipment prior to a period of increased risk.
- Undertake lifecycle assessments of plant to ensure infrastructure is invested in, and in a supportable condition.

As with most things prevention is key and owners and operators can look at developing strategies around short-term

load reduction by turning off specific hardware to reduce the overall strain on cooling systems. With planning and foresight, this is a strategy that could help in the short- to medium-term with limited impact on users, especially with

early warnings and appropriate expectation management.

Having a robust building management system that provides historical data and analytics is vital to providing the required intelligence, enabling data led decisions on what changes can be made and when to make them, and helping to successfully manage services through the extreme conditions and also day to day operation. Remote monitoring tools can be invaluable for monitoring live conditions and making preventative decisions based on real time operational data – way before it has an impact on service and uptime. With data centre infrastructure management (DCIM) platforms there is also the ability to link the IT with the live data, to automate the strategy.

**'AS WITH MOST THINGS PREVENTION IS KEY AND OWNERS AND OPERATORS CAN LOOK AT DEVELOPING STRATEGIES AROUND SHORT-TERM LOAD REDUCTION BY TURNING OFF SPECIFIC HARDWARE TO REDUCE THE OVERALL STRAIN ON COOLING SYSTEMS.'**





## LOUIS MCGARRY

SALES & MARKETING DIRECTOR AT CENTIEL

Any electrical and mechanical equipment has the potential to cause a fire. Prevention starts with the original data centre design and build. The selection of quality products and the ability to be fully concurrently maintainable is also important, so the entire infrastructure can be easily tested, monitored and sustained for optimum performance.

Inevitably data centres grow. There is the tendency to 'make good' and add 'bolt-ons' to deal with capacity issues. A complex and confusing infrastructure is not ideal compared to a well thought out design with sufficient capacity for growth, which is preferable for ease of monitoring and maintenance. Housekeeping is also important – stacks of boxes and papers can add to the risk of fire spreading, so keeping a tidy ship is also necessary.

Although fire could result from any faulty equipment, on the uninterruptible power supply (UPS) side, batteries and capacitors are some of the highest risk components within the power protection system. They require regular preventative maintenance checks and have a recommended age for replacement. If capacitors are not replaced within the recommended timeframe, it could lead to substantial component failure.

Due to the maintainability and quality of components within our systems it would be extremely rare to see a capacitor failure. However, I've seen them go in other

manufactures' legacy equipment and it's frightening.

Valve regulated lead acid (VRLA)

batteries usually have a five or 10 year design life. However, in reality this can be less even if they are maintained properly. Trained maintenance staff must regularly look out for any signs of corrosion, swelling of the blocks and any indication of leaking or other damage. But they can't see inside a battery with just a visual inspection. Impedance testing every six months can identify if any batteries are starting to degrade.

A battery monitoring system should also be used to identify faults early. Environmental conditions such as air temperature and moisture levels should also be checked, as these can impact battery life.

The key to fire prevention in any data centre is correct monitoring and preventative maintenance. Better data centre design and good housekeeping can reduce the risk but if equipment is not properly maintained the outcome could be catastrophic for a data centre and the people working in it.'



**'VRLA BATTERIES USUALLY HAVE A FIVE OR 10 YEAR DESIGN LIFE. HOWEVER, IN REALITY THIS CAN BE LESS EVEN IF THEY ARE MAINTAINED PROPERLY.'**

# Gold Protection for Your Tester



## GOLD SUPPORT



Gold is our comprehensive support and maintenance program for Fluke Networks products and accessories. It provides a premium level of support to minimize business downtime and ensure a high return on your investment.

[Learn more](#)

## **RapidID™ Network Mapping System** reduces the time and cost of patch cord documentation by up to 50%\*.

By using pre-labelled Panduit patch cords and the RapidID Bluetooth-enabled handheld scanner, network engineers can quickly, easily, and more accurately place and trace cables.

The Network Mapping System automates the labour intensive and error-prone cable documentation process to reduce the risk of a network outage. With RapidID, the painstaking labelling process is already done. Additionally, RapidID is a practical alternative to traditional manual approaches and is ideally suited for building a new telecom room, locating installed cabling, or replacing a network switch.

*"RapidID is a game-changer for any network engineer,"* stated Stuart McKay, Sr Business Development Manager EMEA. *"We offer our customers an innovative way to eliminate the pain points around patch cord labelling and documentation for network systems."*

**Rapid ID:**  
**EASY AS**  
**1, 2, 3...**

Rapid ID uses patch cords pre-labelled with unique barcodes and a Bluetooth®-enabled handheld scanner to automate labelling, tracing, and troubleshooting in three easy steps

### **1 INSTALL**

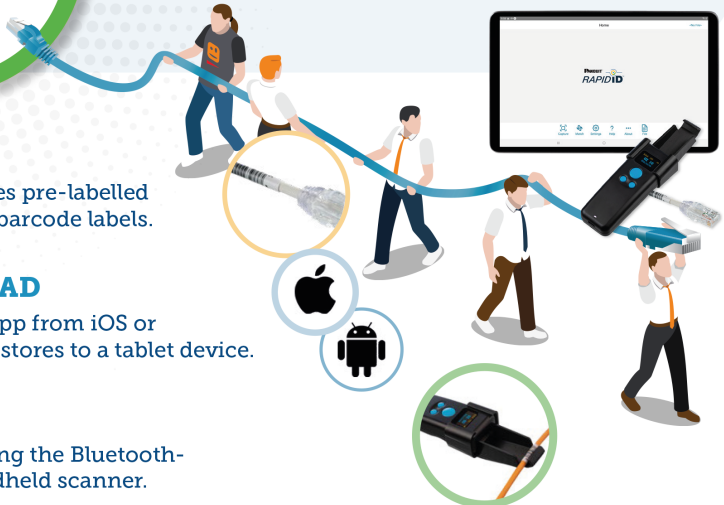
Panduit cables pre-labelled with unique barcode labels.

### **2 DOWNLOAD**

The mobile app from iOS or Android app stores to a tablet device.

### **3 SCAN**

Barcodes using the Bluetooth-enabled handheld scanner.



## STEPHEN BOWES-PHIPPS

VICE PRESIDENT EMEA DATA CENTRES AND CLOUD AT STATE STREET

'What burns in a data centre?' I am often asked. It's easy to look around at the concrete walls, steel cages and metal pipework and think there doesn't seem to be much combustible material. However, fire just requires heat, fuel and oxygen. Let's take these one at a time:

### • Heat

Electricity – high voltage, medium voltage and the majority usually at low voltage. Equipment failure, such as electrical panel deterioration, shorting and arc flash incidents, are all likely start points, as well as faulty client equipment. Adherence to manufacturer maintenance schedules, infrared analyses of electrical switching, and correct training requirements and working procedures can reduce incidences. Aspiration systems, such as very early smoke detection apparatus (VESDA), can pick up equipment malfunctions before they become fire events.

### • Fuel

Cabling is the largest source of fuel, unless lax policies allow cardboard and plastics to be stored within data halls. Cheap cabling is especially combustible but good design of fire zones and firestopping between them can minimise impact.

### • Oxygen

Typical gaseous suppressions such as nitrogen, IG-55/54 and FM200, and water mist/hi-fog systems are effective at reducing the oxygen in a fire zone down to levels where fire is unsustainable.



There are, however, two worrying trends I have seen. The first is a propensity for colocation data centre designers to stop using suppression systems, relying only on localised extinguishant systems. No doubt this saves considerable cost on the space needed for the suppression systems, as well as the pipework, maintenance and suppressant renewal, but moves the risk from the colocation provider

to the client. In the event of a fire, relying on hand extinguishers and the local fire service are not safe options for equipment that may be ruined beyond repair if the extinguishant is activated.

The other issue is the increasing prevalence of lithium-ion battery systems for uninterruptible power supplies (UPS). There are different types of lithium-ion chemistries available – choose incorrectly and not only are you more likely to suffer thermal runaway but, during such an event, noxious gases are emitted and oxygen is produced, which only intensifies the reaction. If you can't keep the lithium-ion in a completely separate building to the data centre, then make sure you buy the versions that do not produce oxygen and only experience thermal runaway at 300+°C.

**'IN THE EVENT OF A FIRE, RELYING ON HAND EXTINGUISHERS AND THE LOCAL FIRE SERVICE ARE NOT SAFE OPTIONS FOR EQUIPMENT THAT MAY BE RUINED BEYOND REPAIR IF THE EXTINGUISHANT IS ACTIVATED.'**



# MARTIN CONNOLLY

CORPORATE SALES MANAGER AT SHARP GROUP

The potential causes of fires from electrical faults, overheating, faulty wiring, cooling malfunctions and human errors underscore the need for preventive measures. The likelihood of a fire is influenced by factors like the quality of equipment, maintenance practices and adherence to safety protocols.



overheating and take preventive actions. Where building management system alarms are not sufficient, additional remote monitoring solutions can be provided.

- **Proper wiring**

Ensure proper electrical wiring, grounding and power distribution to minimise the risk of short circuits. Mandatory five year testing and certification of cabling is essential, along with

annual portable appliance testing.

- **Advanced detection systems**

Deploy fire detection systems to swiftly identify hazards.

- **Regular maintenance**

Conduct routine inspections, maintenance and equipment checks. Fire extinguishers must adhere to regulatory standards and require annual testing. Detection systems need ongoing monitoring to avoid sensitivity loss and must not exceed the recommended manufacturer's lifespan recommendations. An oversensitive detector is as bad as a non-reacting device because this leads to device isolation when there are too many unwanted alarms that can be forgotten about.

- **Fire suppression systems**

Install advanced fire suppression systems, like gas based or water mist systems. Make sure the solution is the most appropriate and as environmentally friendly as possible.

- **Temperature monitoring**

Utilise sophisticated temperature monitoring to identify areas at risk of

- **Training**

Educate data centre staff about fire prevention, emergency protocols and the correct operation of fire safety equipment.

- **Physical security**

It is critical to restrict access to sensitive areas and install fire resistant barriers to prevent unauthorised interference.

- **Disaster recovery planning**

Develop comprehensive disaster recovery plans that include fire scenarios to minimise data loss and downtime.

- **Monitoring and alarm systems**

Employ real time monitoring and alarm systems to provide immediate alerts if temperature or smoke levels exceed safe thresholds.

**'MANDATORY FIVE YEAR TESTING AND CERTIFICATION OF CABLING IS ESSENTIAL, ALONG WITH ANNUAL PORTABLE APPLIANCE TESTING.'**

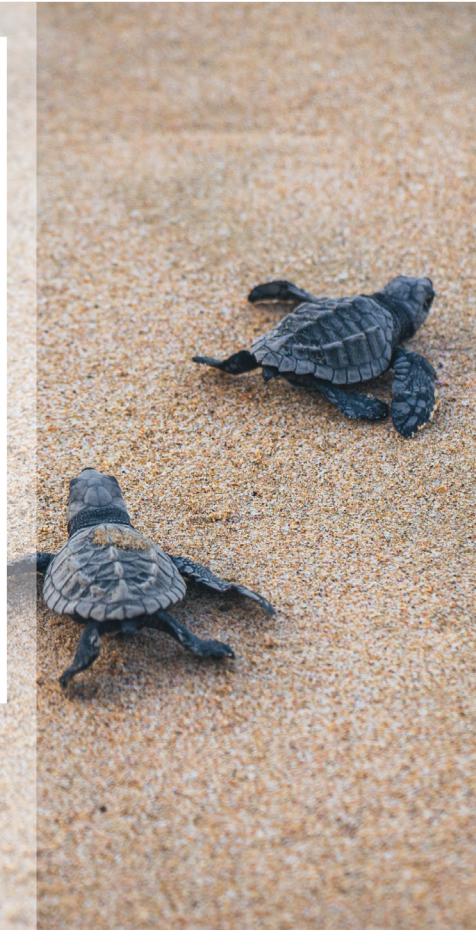
## Reducing Plastic Product Packaging

Wherever possible, we are removing or reducing plastic packaging on our products, replacing it with greener, recyclable materials.

- UK manufactured – lower carbon footprint.
- Non UK manufacturing – reduced component suppliers, less deliveries, consolidated moulding tools all add to reduce our carbon footprint.
- ISO14001 (environmental management system) certified manufacturing facility.
- Demonstrable year on year improvements in environmental performance (energy use, recycling, reduction in waste to landfill, solvent use, lifecycle design processes).

[Find out more](#)

## MADE TO CONNECT



IN-AD-PLASTIC-R10

# Why installers should be including audio in their CCTV installations

Mayflex is an accredited distributor for the full range of Axis products in the UK. We have a team of experts and have an experienced and knowledgeable team on hand to support you

**▶** As well as creating an additional revenue stream, there are many reasons why installers should be including IP audio in their CCTV installations. Here we discuss the top five:

## Reason 1 – Easy installation and configuration

Power over Ethernet (PoE) powers the speakers via the same cable that connects them – eliminating the need to run electrical cables.

## Reason 2 – Efficient maintenance

You can use remote IP based health monitoring and configuration of the complete system. The benefit of remote diagnostics can help make the delivery of your maintenance contract more efficient.

## Reason 3 – Audio content management



This is ideal in retail environments, for example, where stores may be scattered all over the country – or multiple countries – yet content needs to be managed centrally. A networked solution means audio can be managed centrally, such as in a head office, or individually site by site, or a happy mixture of both.



## Reason 4 – Easy to create audio zones

In network audio systems, you don't have the limitation of physically wiring speakers in zones. With Axis, zoning is drag and drop in the system interface, where easy system configuration allows for simple and flexible zoning.

## Reason 5 – Perfect migration from analogue to digital

Looking at total cost of ownership, the flexibility of network audio will, in most cases, outweigh the initial higher spending outlay on

# uding IP ons

**AXIS**<sup>®</sup>  
COMMUNICATIONS

**MAYFLEX**  
A Sonepar Company

ld large stocks



hardware compared to analogue. If, however, an investment has recently been made in analogue audio devices but the flexibility of network audio is needed, you can stage the migration and add analogue devices to your network using

a network audio bridge. The audio bridges, in its own right, a great door opener with end users, as with one relatively inexpensive device you can unlock full network/remote access to an analogue audio system, then build onwards from there!

Axis' network audio solutions are flexible and scalable, making them a top choice across multiple segments. A network audio system is the perfect addition to a video based security installation. It helps you to act faster remotely and stop break-ins and accidents. Network audio unleashes the full potential of your surveillance system – taking you from passive surveillance to active deterrence.

Axis allows you to communicate with staff and customers quickly and clearly, either live or via scheduled pre-recordings. Enhance the in-store experience with background music at

different volumes in various zones. Whether for marketing and operations or safety and security, Axis' network audio is more than a speaker – it is a new and versatile way to interact, protect and inform.

With a single sign-on for scheduling, permissions and health monitoring for up to thousands of sites, Axis Audio Manager Center makes it easy to ensure the right audio – everywhere.

**CLICK HERE** to find out more about the Axis Audio Manager Center solution.

### Get in touch

For more information about Mayflex **CLICK HERE**, call our security sales team on 0121 326 2228 or **CLICK HERE** to send an email.

If you don't already deal with Mayflex, you can **CLICK HERE** to easily open an account.

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





# A step in the right direction

Demand and opportunity are driving growth at the edge, but with it comes unique challenges for operation, management and sustainability, claims Mark Yeeles of Schneider Electric

▶ Enterprise architectures are evolving fast. Driven by myriad demands, from speed and low latency to changing customer habits, new opportunities and business models such as Web3 driven digital fashion, many are struggling to adapt. Add to this is the opportunity, and challenge, around artificial intelligence (AI), and generative AI (GenAI) in particular, and the task of implementing a competitive enterprise architecture becomes even harder.

## GET CLOSER

Edge computing has emerged as a major element of how businesses are tackling these challenges, placing compute power close to where demand is created and data generated to improve operational efficiency. However, even as predictions for rapid growth surge, edge computing must be deployed sustainably, ensuring that this new approach supports, and not hinders, sustainability targets.

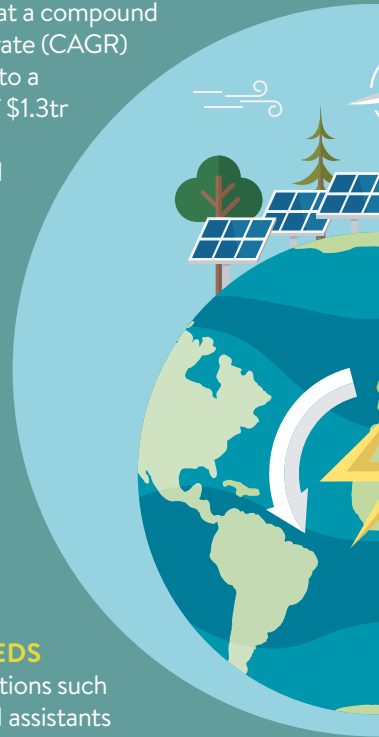
Edge computing has been around for some time. Early predictions were that by the end of this year more than 50 per cent of new IT infrastructure would be deployed at the edge. Similarly, an early Gartner prediction said that by 2025 around three quarters of data would be generated at the edge. It has developed at a furious pace and is now being employed in increasingly sophisticated ways, in combination with AI and machine learning. Gartner has also said that by 2027 machine learning, in the form of deep learning, will be included in around two thirds (66 per cent) of edge use cases.

However, the expectation is that the demand from businesses for services such as GenAI will further drive edge computing adoption. A new report expects the sector to grow at a compound annual growth rate (CAGR) of 42 per cent, to a market value of \$1.3tr in 10 years. This will see demand being driven by specialised assistants, new infrastructure products and co-pilots that accelerate coding – potentially adding about \$280bn of new software revenue.

## LATENCY NEEDS

To allow applications such as GenAI and AI assistants to run at the edge, ultra-low latency connectivity will be required. While optical fibre connectivity is near ubiquitous for many, the mix will also include 5G, especially for last mile instances, benefiting from its relatively fast deployment, bandwidth and latency advantages, as well as its low power consumption.

Developments around the proposed 6G standard are also being planned, further supporting the ambitious use of



# irection

AI, machine learning, automation and autonomous operations. Research by connectivity infrastructure providers has shown that more than 80 per cent of businesses said low latency networks, interconnects and cloud networking are either critical or very important as part of their AI and machine learning infrastructure architecture.

This strong growth in edge deployments, both integrating and supporting AI, risks becoming unmanageable, inefficient and unsustainable – much like the server sprawl of the early virtualisation rush – if it is not implemented and managed with security, resilience and sustainability principles from outset. A combination of techniques, from design to deployment, operation and disposal, will ensure that the envisaged growth in edge computing can be achieved in accordance with green, sustainable principles and targets.

## DESIGN FOR FLEXIBILITY

New generations of design tools are already proving their worth when it comes to efficient, effective designs for data infrastructure. By being able to start from

desired efficiency targets, such as a specific Power Usage Effectiveness (PUE) score, digital design tools can take into account the other required and desired parameters to produce reference designs that immediately meet specifications.

When this is combined with pre-certified, preconfigured designs, build out and implementation can be expedited. Furthermore, in many cases, the digital designs produced do not cease to be of value on deployment of physical infrastructure. Increasingly, these designs become the basis for digital twins of production environments. This gives operators the flexibility to experiment with new architectures and modes, testing new configurations and evaluating changes for issues or benefits without impacting operations.

## EFFICIENCY DRIVE

Digital twins are virtual models or simulations connected to assets to enable synchronisation of real time data. This allows users to examine key areas of design, including the electrical power train, for greater resilience, efficiency and sustainability. They provide a new range of capabilities in data centre infrastructure management (DCIM) systems tackling many of the challenges of edge computing deployments, particularly where they may be remote or relatively inaccessible.

DCIM is now moving into a new phase, termed DCIM 3.0, where cloud based systems not only span all pillars of on-premises, hybrid cloud and edge deployments, but use AI enhanced systems. DCIM is now able to more closely monitor operations for efficiency and sustainability



‘According to World Economic Forum research, currently only nine per cent of extracted materials are reused and almost two thirds (62 per cent) of global greenhouse gasses are emitted during the extraction, processing and production of goods.’

targets, giving greater transparency and insight than ever before. Added to this is the ability to analyse and optimise operations. This means that not only are edge deployments efficient due to digital design but DCIM can now offer suggestions to optimise operations – further adding to efficiency and opportunities to reduce consumption, emissions, underutilisation, stranded capacity and, ultimately, waste.

A key challenge with many edge deployments, whether in remote and potentially hostile environments, or in retail or healthcare settings where there may be no technicians available locally,

is maintenance and break/fix. The new capabilities of DCIM facilitates deeper analysis for abnormal or suboptimal performance. This can be an indicator of imminent failure, allowing the system to flag the need for a maintenance call to assess the issue, rectifying it before it becomes an outage. This is also a significant support to overall resilience, ensuring uptime and availability.

### CIRCLE LINE

The level of instrumentation of edge computing deployments across power, cooling, compute, networking and storage



means that when it comes to end of life for components, more data is available about its complete work lifecycle. This means asset management systems can make more informed recommendations for repurposing, remanufacturing or recycling.

According to World Economic Forum research, currently only nine per cent of extracted materials are reused and almost two thirds (62 per cent) of global greenhouse gasses are emitted during the extraction, processing and production of goods. It describes this as a significant strain on the planet's resources, which needs to be reduced.

Many business are now adopting circular economy strategies. The principles of prolonged asset lifetime and uptime, optimised maintenance operations, repair and refurbish, combined with energy efficiency considerations of maintenance, ensure optimal performance over the lifetime of operation without degradation in efficiency. The methodologies that facilitate IT infrastructure management in a hybrid world mean that more information is available for more equipment to better understand how it can be managed in a circular manner, further reducing emissions, waste and overall impact on the environment.

### **ACTIONABLE STRATEGY**

Edge computing may soon account for as much as half of enterprise IT infrastructure, but it comes with challenges for design, operation and end of life scenarios. A combination of new design tools, digital twins, infrastructure management

and maturing circular strategies will ensure that edge computing can be deployed at scale to drive green initiatives, as well as support emerging technological trends such as AI, machine learning, automation and autonomous operations. This combination of tools and strategies gives businesses greater scope than ever before to develop and implement an actionable decarbonisation strategy for enterprise with sustainable solutions, tools and expertise. ■



### **MARK YEELES**

Mark Yeeles is vice president of Schneider Electric's Secure Power division in the UK and Ireland. He joined Schneider Electric's Industrial Automation business in 2015 and during his tenure as vice president delivered a sustained period of growth for its robotics and process automation solutions. In his role at the Secure Power division, Yeeles is tasked with driving profitable growth by working with Schneider Electric's data centre customers, end users and IT channel partners to address the challenges associated with sustainability, efficiency, energy security and resilience.





Audit | Design | Build | Test | Maintain

## iDAC Solutions (iDACS)

The IT infrastructure in your building is the platform that all your converged network and internet of things (IoT) smart technology sits on.

The phrase ‘weakest link’ is used a lot, but in the case of your intelligent building infrastructure it’s true. If its performance is marginal, then data analytics from environmental, lighting and heating, ventilation and air conditioning (HVAC) sensors may experience lag, or worse still result in downtime, affecting the overall efficiency and sustainability of your buildings.

iDACS has been the exclusive UK&I source for Datwyler IT Infra’s Swiss



engineered cabling and edge computing systems since 1983. Datwyler manufactures superior performance products that help to keep your building automation systems running smoothly, efficiently and more sustainably.

And Datwyler practises what its preaches, as all of its Swiss plants are now completely carbon neutral, saving around 2,800 tons in CO2 emissions per year. It has also committed to making all plants across the world carbon neutral by 2030.

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

## HellermannTyton

Over the decades HellermannTyton has been removing plastic from its packaging and is now free from polybags in many of its ranges. We are currently working to remove them from all products where possible.

This reduction in plastic packaging not only has a positive impact on the environment but provides additional benefits. These include reduced installation times from simply lowering the time spent removing the products from their packaging. In addition, our corrugated



cardboard packaging is made from up to 70 per cent recycled materials and is 100 per cent recyclable. It is also FSC Certified, which means that this packaging is made with materials from well managed forests and/or recycled sources.

HellermannTyton has made huge strides to become more environmentally responsible and reduce its carbon footprint through efficient energy use, continuous improvement in recycling, reducing waste to landfill, lowering solvent use and enhancing lifecycle design processes.

For more information [CLICK HERE](https://www.htdata.co.uk).  
[www.htdata.co.uk](https://www.htdata.co.uk)

## Siemon

Environmentally conscious businesses are no longer just looking for greener products and solutions to help reduce their carbon footprint, but for trusted partners that follow sustainable business ethics in line with their own environmental ideologies.

Since buying its first tree farm in 1962, Siemon has continually supported environmental policies and conservation efforts. A 15,600ft<sup>2</sup> solar power facility at Siemon's corporate manufacturing campus reduces the company's annual carbon dioxide emissions by over 373,000lbs a



year and an innovative waste management program has helped the company achieve zero landfill status.

Today, all of Siemon's global manufacturing facilities are ISO 14001 certified with individual environmental management systems. All of these efforts combined have helped it become carbon negative

and the company will continue to drive environmental responsibility and green initiatives for its clients.

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

## Excel Networking Solutions

Excel Networking Solutions offers one of the most comprehensive ranges of copper cabling solutions – supplied in 100 per cent plastic free packaging. Inclusive of

Category 5e, 6, 6A, 7A and 8 copper cable classes, Excel's structured cabling products constitute an end to end solution

where performance and ease of installation are prerequisites.

With multipacks of keystone jacks, customers can save up to 60 per cent off

their preparation time. Each tray of 24 jacks is supplied in a simple 100 per cent recycled and recyclable cardboard tray, as opposed to individual single use plastic

bags.

By choosing the Excel multipacks it's quicker to install, easier for your engineers on-site, lowers

installation costs, reduces waste on-site and is 100 per cent recyclable.

[CLICK HERE](#) for more information.  
[www.excel-networking.com](http://www.excel-networking.com)




**Quicker to  
Install**

**excel**  
without compromise.

**X** ZERO  
WASTE Packaging



# Centiel launches free lunch and learn seminar series

 Centiel, the leading uninterruptible power supply (UPS) manufacturer, has launched a 'lunch and learn' seminar series, which is delivered free to organisations to help teams understand more about critical power protection.

The first level one seminar covers UPS technology and topology, specifically looking at basic UPS operation, transformerless UPS, parallel UPS, modular UPS and specifying a UPS.

The second level seminar will cover specification and installation including sizing, topology, energy storage, physical environment and electrical installation. The third level seminar will cover UPS management and

connectivity including rightsizing and sustainability, remote monitoring and peak shaving.

David Bond, chairman at Centiel UK, stated, 'Delivered in person by our experienced managers anywhere in the UK, these seminars are ideal for teams looking to broaden their knowledge about UPS solutions, power protection and keeping loads safe from power surges. They are also suitable for continuing professional development (CPD) activities, as well as contractors and consultants looking to deepen their knowledge about this important area.'

Centiel's team are well known as pioneers within the UPS industry, originally developing and bringing to market the first three phase

transformerless UPS. Since then, they have led the industry, also developing the first true modular hot swappable UPS configuration.

Centiel now offers a full range of class leading, energy efficient, power protection solutions. However, what also sets the company apart is its team's reputation as highly experienced power protection specialists, who act as trusted advisors to a variety of customers in the data centre,

medical, government and corporate sectors. Clients rely on the advice and expertise of Centiel's team to design and provide solutions to maximise power availability,



lower total cost of ownership (TCO) and future proof the protection of critical loads.

David Bond concluded, 'As trusted advisors about UPS technology, our mission is to share knowledge to help organisations make more informed decisions about their power protection needs. Organisations need to understand more about UPS solutions so they can work more closely with manufacturers to ensure systems are optimised in terms of efficiency, and how TCO can be reduced while achieving maximum power protection. We can help them achieve this.'

**CLICK HERE** for further information about Centiel or to send an email **CLICK HERE**.

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

# Going on an efficiency drive

As demand for digital services and data storage increases, so does related energy consumption. **Carsten Ludwig** of R&M explains why a more sustainable approach to power, water and raw materials is vital

**▶** As data centres and fibre to the home (FTTH) networks require significant resources, there is a need to minimise the environmental impact of operations. Doing so will ensure a more sustainable and resilient future for the digital infrastructure that underpins our societies and economies.

## SPECIAL REQUEST

Data centre and optical fibre network operators and their clients need to reduce energy consumption. According to TechTarget, 93 per cent of organisations are incorporating environmental, social and governance (ESG) elements into requests for proposals or requests for information. What's more, governments and regulatory bodies are increasingly imposing energy efficiency and carbon emission regulations and standards.

Sustainable practices ensure compliance with these regulations, help avoid fines or penalties, attract customers and

gain a competitive edge in the market. So how is it possible to create a more efficient infrastructure?

Overall, capacity must be anticipated accurately to continuously match changing demand as closely as possible. Delivery must be exactly in line with requirements, while respecting the business case and equipment configurations – that means no under- or over-specifying. In order to meet this challenge, artificial intelligence (AI) will be essential. While humans still have the lead when it comes to creativity,





we are no match for predictive algorithms and automated analyses that can process enormous amounts of data in real time. Furthermore, energy efficient networks and data centre equipment can significantly reduce power consumption.

## HOME RUN

Smart planning and design can lead to significantly more efficient use of resources. This involves optimising the routing of fibre cables and minimising the length of connections to reduce energy losses and materials usage. Connectivity can contribute to realising optimum length planning, as all (outdoor and indoor) signalling equipment needs to bridge a certain distance. The shorter this distance the less light power is required for transmission, which means making an informed choice for each section of a network and enhancing power efficiency.

Transitioning to renewable energy sources can greatly enhance sustainability. Utilising solar, wind, hydroelectric or

other renewable energy options can help minimise networks' carbon footprint and reduce reliance on non-renewable resources. Encouraging equipment manufacturers to prioritise energy efficiency in their products can make a considerable difference in the overall sustainability of a FTTH network.

For each part of the network, it pays to investigate whether fibre or copper cabling offers the best environmental performance. BREKO, Germany's leading broadband association, states that copper networks consume up to 17 times more electricity than fibre optic networks. An FTTH Council Europe study shows that fibre networks emit 88 per cent less greenhouse gases per gigabit than existing technologies. Fibre is light and thin, reducing transport emissions, and is made from silicate, which is available in virtually unlimited quantities.

## OUR SURVEY SAYS...

According to the Uptime Institute's Global Data Center Survey 2022, 63 per cent of data centres expect regional authorities will want them to publicly report sustainability data within the next five years. The better the integration and interoperability between data centre computing hardware and power, connectivity, cooling, security, monitoring and housing, the more sustainable and cost efficient overall



**‘Analytics can help organisations track and report supply chain performance, carbon footprint and energy consumption over time, while identifying areas of inefficiency within a network or data centre.’**

Based on this information, the system could, for example, also look at cooling. A device being shut down will need less cooling, whereas a device being ramped up elsewhere might need it badly to avoid failure –

performance will be.

However, this requires some smart thinking during the planning phase of new builds or expansions. Innovations such as latching relays in power distribution units (PDUs) that consume very little power when an outlet is switched on, optimised airflow with minimal losses and carefully managed circulation, as well smart data centre infrastructure management (DCIM) software with a unified dashboard, can all make a difference.

### ROAD MAP

Relationships and interdependencies need to be mapped in detail to align these in the most beneficial ways possible. Data from automated infrastructure management (AIM), intelligent infrastructure management (IIM), patching and physical access systems needs to be correlated.

which also influences sustainability.

Instead of cooling everything as much as possible all the time, a smart balance can be made to reduce overall power consumption, while increasing operational lifetime. In the same way, intelligent power management can send alerts to specific machines in advance, so they know they’ll need to shut down certain processes momentarily because another device needs more capacity. So instead of providing maximum power and headroom to all devices all the time, a more efficient approach to power distribution and overall consumption can be implemented too.

Besides cooling, batteries also waste significant power. They inevitably lose capacity over time and need to be replaced every few years, while increasing temperatures have an adverse effect on battery life. This needs to be taken into

consideration when deciding whether to implement batteries for certain data centre tasks.

### SMART INFRASTRUCTURE

Converged networks that combine previously disparate functionalities in buildings enable new energy conserving technologies and applications. For example, power over Ethernet (PoE) can power and control individual LED lights



via their unique IP addresses throughout a building. An all over IP approach opens vast development opportunities for smart buildings. All devices involved in building technology and management can communicate in the same way, without barriers, with the LAN providing the basis for physical communication.

Data and AI can continuously optimise logistics, production and supply chain processes, and provide insights that allow you to make energy saving tweaks. In data centres, for example, targeted cooling is crucial in helping scale up and scale down much more efficiently. Flexible solutions that provide data about system usage allow a data centre to be cooled more efficiently. Data driven management of lighting, heating and so on also helps improve a company's overall sustainability performance. Integrated intelligent building solutions, based on a common platform such as IP, leverage and scale up these benefits.

### SCRATCHING THE SURFACE

Analytics can help organisations track and report supply chain performance, carbon footprint and energy consumption over time, while identifying areas of inefficiency within a network or data centre. By analysing data on energy metrics operators can identify opportunities to reduce energy wastage and optimise cooling, lighting and other power intensive processes.

Analysing network traffic patterns and user behaviour can help optimise data flow, ensuring resources are used efficiently and evenly distributed across the network. This can prevent overloading specific components and reduce overall energy consumption. Real time health analytics can help maximise the operational lifetime of assets and ensure equipment

isn't replaced sooner than necessary. By predicting and preventing failures, unnecessary hardware replacements and energy intensive emergency repairs can be minimised, which also means less waste.

### MAKING A DIFFERENCE

Not all these steps need to be implemented in every type of network. It makes sense to first find the areas where new measures will make the biggest difference and start there. In today's complex networks, determining this can require a great deal of effort. Mapping the installation, activities and business plans using a single platform should help make things significantly easier. By selecting and combining the best approaches for each unique situation, it becomes possible to reduce indoor and outdoor space requirements, construction work, maintenance and energy usage, which all contribute to overall improved sustainability performance. ■



#### CARSTEN LUDWIG

Carsten Ludwig is market manager data centres at R&M. An experienced sales and marketing director leading teams in various market verticals supporting digitalisation, he has previously worked with Siemens, Nokia and Huber+Suhner.

## Keysource appoints David Gallagher as new project director

Keysource has appointed David Gallagher to support the company's strong international growth. He joins as project director and will initially take lead responsibility for the delivery of a major project in Brussels, as well as overseeing the existing project team and supporting the company's strategic growth plans.

A former executive at Goldman Sachs, Gallagher was responsible for delivering large scale real estate and data centre projects across the UK and mainland Europe. He brings with him a broad range of skills and experience, particularly in construction management,

stakeholder management and engineering, having worked within the building services industry for 37 years.

Gallagher said, 'I am excited to be working at Keysource, as it is one of the sector's most successful and innovative businesses. As a project director I believe communication is essential and a



David Gallagher

problem shared is a problem halved. This is key to having a successful team and delivering a successful project, and I will be bringing this approach to my new role.'

## Momentum Sales Consulting achieves training partner status with Novalead

Momentum Sales Consulting and Novalead have entered into a strategic partnership aimed at upskilling salespeople and equipping them to sell effectively in the 21st century. After 35 years in the digital infrastructure industry, Neil Roberts of Momentum Sales Consulting is well placed to work with sales teams from the technology community.

The new relationship will give Roberts

access to the full suite of Novalead courses including Empathic Selling, 12 Essential Sales Skills Sets and Commercial Awareness. The objective is to expand the reach of the well-established training services offered by Novalead since 2016.

'We're thrilled to welcome Neil to our team. With his extensive experience, we are confident that we will bring exceptional value to sales teams in the technology community,' commented Mike Hardcastle, director and founder of Novalead.



L-R Michael Hardcastle and Neil Roberts

## Cisco and Nutanix forge global strategic partnership to simplify hybrid multicloud

Cisco and Nutanix have formed a global strategic partnership to accelerate hybrid multicloud deployments by offering the industry's most complete hyperconverged solution for IT modernisation and business transformation. The new offering integrates Cisco's Unified Computing System with the Nutanix Cloud Platform and will be sold by Cisco.

IT organisations continue to face significant operational hurdles and urgent sustainability and security concerns as a result of increasing multicloud complexity. This new partnership answers these challenges by simplifying and accelerating the delivery of infrastructure and applications, at a global scale, through best in class cloud operating models,



unparalleled flexibility and automated resiliency with industry leading customer support.

'Customers are asking for solutions that are simple, sustainable and future ready,' said Jeremy Foster, senior vice president and general manager at Cisco Compute. 'Our

partnership answers this with a complete solution spanning virtual compute, networking and storage across customer data centres and public clouds. By combining Cisco's award winning software as a service managed compute portfolio with Nutanix's cloud platform software, we can help customers develop a balanced approach to power modern workloads on-premise and in the cloud.'

### CHANNEL UPDATE IN BRIEF

Vertiv has unveiled an upgraded testing room at its thermal management centre near Tognana, Italy. This investment significantly increases the facility's testing capacity and manufacturing capabilities, and demonstrates Vertiv's ongoing commitment to the advancement of chilled water systems to help drive liquid cooling adoption.

MLL Telecom has formed a strategic partnership with Sensei Networks, which will extend the company's capabilities to include real time asset tracking and automated response applications.

Iceotope has appointed Shareef Alshinnawi as vice president of strategic accounts.

LiveAction has formed a partnership with Multipoint Group. With a primary focus on Israel, Turkey, Greece and Cyprus, Multipoint will deliver LiveAction's full product portfolio in addition to technical support.

Westermo is to deliver remote substation connectivity for a major European electricity operator as part of a project to integrate renewable energy into the grid and decarbonise the electricity network.



# Hitting the target

**Alberto Zucchinali** of Siemon takes a fresh look at automated infrastructure management (AIM) systems and the benefits they provide to data centre physical layer management

**▶** AIM systems have played a role in physical layer network management for decades. In the early days, the primary task of an AIM system was to support the smooth running of a company's data centre by electronically monitoring and controlling a network's physical infrastructure. This was achieved through the integration of innovative hardware such as smart patch panels and optical fibre enclosures with user friendly master control panels, and connectivity with next generation internet based software to enable access from virtually any device anywhere. This provided users with real time tracking and reporting of their network wide physical layer activity. Meanwhile, hierarchical views mapped the entire network – from rack and cabinet infrastructure to work area and floor layouts displaying circuit diagrams, including active equipment.

## LET'S GET PHYSICAL

The key benefits of deploying an AIM solution included reducing data centre downtime, which often occurred as a result of poor maintenance practices or the negative impact of human error. Through tracking physical layer changes and managing network connections, problems could be fixed quickly and uptime maintained. Other advantages included better data centre management by streamlining the documentation process when data centres were being expanded and modified.

AIM systems also provided auditable information for regulatory compliance. By maintaining an audit log of all network events, AIM simplified compliance with



regulatory mandates including Sarbanes-Oxley, ITIL, HIPAA and FDA 21 CFR Part II. Whilst all of the above benefits still hold true today, the value of deploying an AIM system in the data centre is now even greater than before.

## DIFFERENT TIMES

The data centre landscape has changed significantly. Data centres are no longer enterprise/on-premise only facilities but

are heavily distributed entities. Hybrid deployments are commonplace, with businesses utilising a combination of cloud based and on-premise infrastructures.

Where companies require the flexibility to expand their infrastructure, they can outsource their assets to colocation facilities. Data centres also exist in the form of many small and largely distributed facilities, as is the case with edge

density fibre optic and copper cabling and connectivity. Since many of these sites will be unmanned, or have extremely limited access, these connections can be monitored and managed remotely.

Real time alerts of network and security events, such as unauthorised access or changes to the network, will notify IT or security staff to help prevent downtime. With internet based software, AIM systems

enable access from virtually any device anywhere. They provide immediate guidance to managers carrying out tasks remotely and – when necessary – to local maintenance teams to properly drive, control and execute daily work orders and/or emergency operations in a quick and secure manner.

AIM systems provide a real time view of networks at remote sites, helping to ensure compliance with corporate IT policies. Those equipped with a search engine allow users to quickly locate any item on the network, view its attributes and connection status, and then action additional support if required.



computing and a corresponding rise in self-functioning data centres that are deployed at the outer edges of an IP network. Having to manage multiple sites effectively can become challenging and this is where AIM should move back into focus.

### FORM AND STRUCTURE

Edge data centres can take the form of modular, containerised, micro or office based facilities, and require high

### WORKED UP

Deploying an AIM system means that IT managers can view different colocation deployments, and how they are being interconnected, from a single place. An AIM system allows them to monitor their owned assets and how they are connected, as well as the work that is being done to them by the staff employed by the colocation provider.

Integrated work order modules ensure

‘Looking into the future, the capabilities of an AIM system will increase significantly if AI and machine learning algorithms are integrated. This creates a dynamic approach where rules can be changed by AI according to multiple different parameters and previous experience.’



46

that orders carried out by third-party personnel are completed correctly. Integrated panels help to guide technicians on work order steps and indicate if a task is done correctly or not. Work can be managed and tracked as it is completed, and new connections become instantly visible. Since all network information is stored in a software driven database that is automatically updated in real time as moves, adds and changes are made, the condition of the network and the assets located outside its own premises are known at all times.

### PLAN OF ACTION

In hybrid environments, where businesses deploy their most critical data centre assets

on-premise, AIM can support with capacity planning. The information provided by AIM helps schedule equipment upgrades and replacements by collecting the capacity of the current environment and using tools to measure it against future requirements. AIM can also help optimise the usage of existing assets. For example, the level of server usage can be determined to decide whether a new server must be added, or old devices switched off to save on electricity and cooling.

Deploying AIM frees up time for staff. Rather than training on all aspects of managing and monitoring a network, AIM monitors the network and provides a hierarchical view from rack and cabinet infrastructure, to work area and floor

layouts, with complete circuit diagrams.

### NEW KIDS ON THE BLOCK

Looking into the future, the capabilities of an AIM system will increase significantly if artificial intelligence (AI) and machine learning algorithms are integrated. This creates a dynamic approach where rules can be changed by AI according to multiple different parameters and previous experience.

Historical network data collected by AIM could, for example, be analysed using AI to provide meaningful forecasts that help data centre managers take proactive steps in preventing disruptions or even network failures that lead to downtime. In the same way, AI analysis can detect changes in operational processes that might lead to future failure,

enabling staff to respond immediately and resolve the problem before damage is done.

Taking it one step further, human intervention could even be reduced, or prevented entirely, if AI algorithms addressed the problem directly. For example, if server loads grow, based on trends collected by AIM and AI forecasts, some virtual machines could be moved to different servers to prevent reaching maximum server computing capacity and optimising data centre workload, as well as power and cooling. AI algorithms might also have the power to optimise the physical layer network, for example, by changing the layout of data centre in

order to improve thermal management and ensure better performance.

### VALUE ADD

No matter what lies ahead, the importance of AIM systems and their ongoing strategic value to organisations with complex and distributed network infrastructure is clear. Users should be searching out systems that provide the adaptability and scalability that best supports them. ■



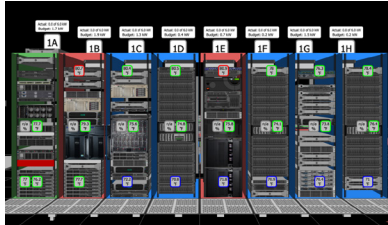
#### ALBERTO ZUCCHINALI

Alberto Zucchinali is senior technical sales manager at Siemon. With over 20 years' experience in structured cabling, he has authored and presented a number of papers at worldwide industry conferences on various specialist subjects. Today he applies this learning to data centre infrastructure and designs network architecture for sites around the world.

## Sunbird Software

Sunbird Software is changing the way data centres are managed with elegant data centre infrastructure management (DCIM) software that's fast, easy and complete. Our solution supports European Union (EU) Green Deal and Code of Conduct for Data Centres (Energy Efficiency) requirements with:

- Real time monitoring to automatically collect, store, trend and alert on energy consumption and environmental data.
- More efficient facilities via informed capacity planning that helps you defer building new data centres.



- Reduced energy consumption by providing the data you need to stop overcooling, find ghost servers, increase the efficiency of your private cloud or virtual environment, and drive more efficient behaviour.
- Compliance reporting with centralised data collection and documentation plus zero configuration energy dashboard charts and reports that automatically track Power Usage Effectiveness (PUE).

The best data centre managers choose Sunbird. Find out why and [CLICK HERE](#) to schedule a demo.

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

## Panduit

Panduit's RapidID creates a network map using patch cord scanning techniques. The software enabled network mapping system supports smart, scalable and efficient connectivity solutions.

RapidID is designed to reduce the time and cost of patch cord documentation by up to 50 per cent. Using prelabelled Panduit patch cords and the RapidID Bluetooth enabled handheld scanner, network engineers can place, trace and replace cables to create a comprehensive network map.

The network mapping capability automates the labour intensive and often error prone cable documentation process to reduce the risk of a network

outage and costly downtime. RapidID is a practical alternative to traditional manual approaches and is suited to building a new telecom room, locating installed cables or replacing a network switch.

Each prelabelled patch cord has a unique barcode and

by using the handheld scanner an engineer can automate labelling, tracing and troubleshooting in three easy steps:

- Install Panduit cables that feature the barcode labels
- Download the mobile app from iOS or Android app stores to a tablet device
- Scan barcodes using the Bluetooth enabled handheld scanner.

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

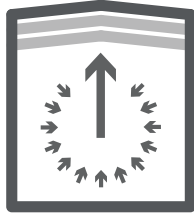
[www.panduit.com](http://www.panduit.com)





## Stellium Datacenters

Stellium Datacenters is the first colocation data centre in the North of England to achieve Open Compute Project (OCP) Ready status, including a listing on the OCP Marketplace as an accredited solutions provider.



OCP Ready certified data centres provide colocation services capable of supporting high performance computing (HPC), artificial intelligence and machine learning workloads. As part of Stellium's OCP Ready provision, we provide the HPC cooling of client racks from 10-100kW using in-row/rear door chilled water

# OCP READY™

cooling. Bespoke designs can be supported for fully immersive cooling up to 200kW per rack.

Stellium's data centre now delivers a highly connected, sustainable colocation option. It has the combined benefits of OCP compliance, a cool North of England climate, a location with the UK's lowest carbon intensity output rating, 80MW of REGO certified renewable power, and a facility that has achieved multiple data centre and network ISO certifications to date.

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

## Siemon

As network infrastructure environments become ever more complex and diverse, the ability to effectively monitor, manage and protect connections, no matter where they are, is more critical than ever.

Siemon's MapIT G2 delivers next generation infrastructure management for the physical layer. It has been developed to provide the ideal solution for your distributed and evolving network infrastructure assets and integrates a powerful combination of innovative Siemon hardware, and high performance connectivity, with next generation EagleEye Red automated infrastructure management (AIM) software.



This intuitive combination provides users with exceptional real time tracking and reporting for their network wide physical layer activity, and provides an intelligent foundation that will scale with their ever changing needs.

Explore the potential by [CLICKING HERE.](#)  
[www.siemon.com](http://www.siemon.com)

# Taking control of the situation

**Herman Chan** of Sunbird Software explains how modern data centre infrastructure management (DCIM) software can simplify remote edge site and intermediate distribution frame (IDF) organisation

As data centres become more decentralised, edge sites and IDF closets are now elevated to mission critical status. Still, they are often overlooked and undermanaged when compared to more traditional sites.

## HANG 10

Common challenges of IDF closet management include lack of on-site staffing, low visibility into equipment inventory, inaccurate asset and configuration management, lack of understanding of rack capacity, no system for work orders for technicians performing changes, inability to monitor site health and

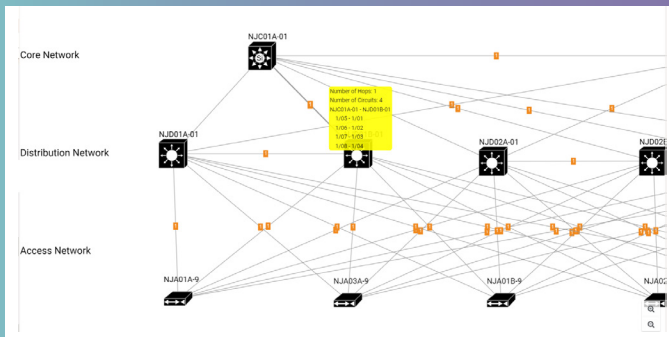
in their remote edge sites and IDF closets. The top 10 use cases of DCIM software for IDF closet management are:

- **Accurately documenting the network**

IDF closets contain a lot of ports, cabling and connections. Poor network documentation leads to difficult troubleshooting and planning, inefficient capacity utilisation and erroneous work orders.

DCIM software allows you to visually document all connections of both active and passive components across all your sites with interactive network diagrams.

You can see your entire network in a single pane of glass with a high level of detail and even track the connections and structured cabling that connect your closets to the rest of the network. With automatic and accurate network diagrams, you can boost productivity by reducing the time spent troubleshooting, planning and maintaining manual



security, and siloed tools and teams that don't communicate. However, leading data centre professionals are leveraging modern DCIM software to dramatically improve and simplify how they manage equipment

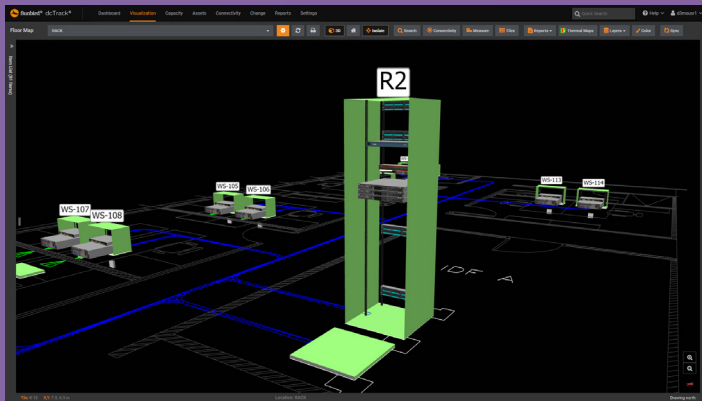
diagrams.

- **Remotely visualising racks, devices and cabling**

Knowing what equipment you have, where

it is located and how it is connected is a serious challenge when you are managing many IDF closets. DCIM software provides a 3D digital twin of all your sites so you can see a real time model of any site from anywhere, and achieve easier and faster management than being on-site.

You can see your rack contents better than if you were standing in front of them. Automatic rack elevations provide a 3D replica down to the port level that is to scale, and you can even visualise the port to port connectivity. Plus, you can overlay readings from power and environmental sensors to understand the health and capacity of any IDF closet without leaving your desk.



- **Tracking the right key performance indicators (KPIs) and sharing data**

The details about IDF closets are often maintained in tools used by the network team and not shared with other functions. DCIM software democratises data with zero configuration dashboard chart widgets, reports and visual analytics that enable a centralised view of all the physical infrastructure resources across your entire enterprise.

Creating and sharing personalised dashboards enables data driven

collaboration across all teams. KPIs you can track out of the box include site health, utilisation and capacity by key resource, energy cost, temperature per rack and data ports usage by connector type, VLAN/ grouping, protocol, data rate and media.

- **Maintaining an accurate inventory of assets, parts and spares**

Tracking all your remote site assets helps you ensure successful deployments, better manage the lifecycle of equipment, and know the relationships of all edge and IDF closet infrastructure. Excel spreadsheets that are too time consuming and prone to human error can be left behind.

Visio diagrams no longer need updating as the DCIM software

provides real time rack elevation views of infrastructure like servers, storage, networking equipment, rack power distribution units (PDUs) and patch panels. Key information like make, model, dimensions, weight, serial number, location, RU position

and configuration can be easily tracked, while custom fields allow you to track anything else. In addition, tracking parts and spares likes hard drives, cards, memory modules, power supplies and patch cables lets you know if you have enough in stock for new deployments and to quickly repair equipment.

- **Performing regular asset audits**

Over time, undocumented changes in your IDF closets could occur. As these add up, your actual environment will be different

## 'DCIM software allows you to visually document all connections of both active and passive components across all your sites with interactive network diagrams.'

than your documentation.

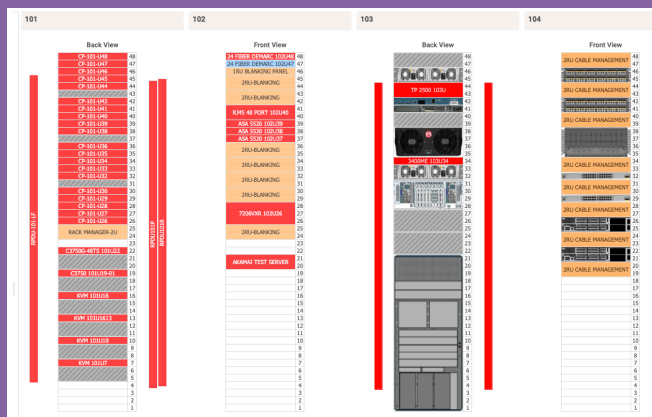
Asset audits of each site should be performed at least once a year, but most organisations do not have the people or efficient tools to support annual audits.

what is happening in any location.

For example, an enterprise health dashboard displays the real time health of all your sites in a single screen with colour coding based on warning and critical

thresholds you configure.

You can then drill down into the details to see what the issues are and proactively resolve them. Automatic emails upon threshold violations ensure you are always the first to know of potential issues like hotspot formations, power capacity limitations or loss of redundancy anywhere in the world.



With DCIM software, one person with a barcode or QR code scanner can audit racks quickly and accurately. Built-in logic anticipates the next step in the process and a configurable voice response either confirms the item is correct in the database or lets you know if a change is recommended.

### • Monitoring and alerting on power and environmental conditions

Each of your IDF closets has its own power and cooling system that needs to be properly managed to maintain uptime and optimise capacity utilisation. DCIM software automatically collects, stores, reports and alerts on the live measured readings from your power meters and environmental sensors, so you always know

### • Safeguarding closets from physical threats

IDF closets are easily exposed to both malicious and unintentional security threats. DCIM software offers a centralised data centre security platform that includes reporting, audit logs and video surveillance feeds. You can monitor who has access to various sites and racks, how often they are accessed and if attempts are successful or not. Local radio frequency identification system (RFID) authentication or remote control of all your electronic door locks mitigates security risks and helps you comply with regulations.

### • Intelligently planning capacity

Your IDF closets may be constrained by

space, power, cooling or port capacity that prevents you from deploying equipment and rolling out new services until you purchase more. DCIM software allows you to remotely visualise rack capacity in 3D, report on the most common capacity KPIs with purpose built dashboard charts and reports, accurately understand space, power and cooling capacity, and intelligently find the ideal RU space to deploy new equipment.

IDF closets commonly run out of port capacity but DCIM software lets you see how many available ports each closet has, so you can purchase more resources before it becomes a serious problem. Plus, real time monitoring of your actual rack power and uninterruptible power supply (UPS) loads lets you understand your overall power consumption and battery runtime to maximise the availability of IT services.

#### • Ensuring redundancy

Each piece of equipment in an IDF closet can be connected to hundreds or thousands of other devices. Redundancy is critical because a single failure in a closet can cause significant downtime that costs your organisation productivity and money.

DCIM software enables you to run a power failover simulation report to identify which closets are at risk and what equipment will continue functioning in the event a rack PDU goes down. Plus, health polling of intelligent rack PDUs decreases the likelihood and severity of outages by ensuring systems are online and alerting you if there is an issue.

#### • Integrating tools and teams

IDF closets are typically managed by different teams with different tools than the data centre and facilities teams. This causes information siloes that result in

inaccurate data and reduced productivity.

With modern DCIM software, you can reduce manual effort, enable a culture of data driven collaboration and streamline workflow across teams by implementing automation via integration. This is achieved by deploying and integrating out of the box connectors that automatically populate data in the correct fields of systems such as configuration management databases (CMDBs), ticketing systems and DevOps tools.

### FORWARD THINKING

Edge sites and IDF closets are a mission critical component of today's distributed and complex data centre environments, but they are often undermanaged by disparate teams. However, modern DCIM software offers a new way forward by providing a centralised view of global resources across all sites in a single pane of glass that all teams can benefit from. ■



#### HERMAN CHAN

Herman Chan is president of Sunbird Software. Prior to this role he was the DCIM general manager and vice president of marketing at Raritan for over 15 years. ▶



# Quick clicks

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

The Value Of Intelligent Power Distribution Units And DCIM Software In Server Decommissioning is a white paper by **Chatsworth Products (CPI)**. [CLICK HERE](#) to read it.

Internet Users Are Estimated To Reach Six Billion Next Five Years is a blog from **Atlas VPN**. [CLICK HERE](#) to read it.

Is Base-16 A Good Solution For The Data Center? is the question posed in a blog by Gary Bernstein of **Siemon**. [CLICK HERE](#) to read it.

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Are we right about DCIM 3.0? is a blog by Kevin Brown of **Schneider Electric**.  
[CLICK HERE](#) to find out the answer.

ion In The

**Ivanti** has published its Defending IT Talent Report, which found that a quarter of IT professionals are seriously contemplating leaving their current jobs within the next six months.  
[CLICK HERE](#) to download a copy.

**Equinix** has published its 2023 Global Tech Trends Survey.  
[CLICK HERE](#) to find out more and download a copy.

Beyond The GenAI Hype: Real-World Investments, Use Cases And Concerns is a report from **Enterprise Strategy Group**.  
[CLICK HERE](#) to download a copy.



## Virtus unveils €3bn 300MW Wustermark project in Brandenburg

Virtus Data Centres has announced its Virtus Wustermark data centre campus. Just 30km from the iconic Brandenburger Tor in Berlin and only 12km from Berlin's city limits, this project sets a new benchmark in mega-scale data centre capacity for cloud and artificial intelligence (AI) in Europe, with an innovative approach to the use of sustainable power, waste heat reuse and technology. Covering more than 350,000m<sup>2</sup>, phase one of the Virtus Wustermark campus is projected to be operational by 2026 and will boast 300MW of incoming power across two locations.



The Virtus Wustermark campus is poised to become one of Europe's largest scale green data centre campuses, demonstrating Virtus' commitment to raising the bar in terms of scale and sustainability across Europe. The development includes a strategic collaboration with the grid operator to use renewable energy at a key renewable energy grid supply point and marks a significant step in the company's journey towards the goal of achieving net zero emissions on all reportable activities by 2030.

## BT takes the plunge with new liquid cooling trials

In pursuit of its commitment to becoming a net zero business by the end of March 2031, BT Group is trialling several liquid cooling technologies that could substantially improve energy consumption and efficiency metrics in its networks and IT infrastructure.

BT Group will trial precision liquid cooled network switches using a solution provided by Iceotope and Juniper Network QFX Series switches, which are widely used in existing network cloud architectures. Ahead of the trial, they have together demonstrated a replica



set-up using an HP x86 server at BT's Sustainability Festival. The demonstration showed how power used to cool a network switch typically deployed in a data centre could be significantly reduced.

Like most large data centres, network and IT equipment across BT Group's estate is currently cooled using air based systems. As network capacity and demands increase, next generation IT and network hardware will have to work harder and will become hotter. Consequently, the power needed to cool them will increase, driving up energy consumption and operational cost.

## Colt DCS expands footprint into the Indian data centre market

Colt Data Centre Services (DCS) has launched its first data centre in India. The flagship Navi Mumbai data centre marks Colt DCS' strategic expansion and commitment to supporting the increasing demand of hyperscale cloud service providers and large enterprises in the fast growing Indian data centre market.

Colt DCS' 15 acre Navi Mumbai data centre provides customers with tremendous flexibility and scalability and is capable of supporting 120MW of IT power capacity. The flexible and scalable design allows Colt DCS to meet the



quickly changing demands of emerging technologies and use cases such as generative artificial intelligence, high performance computing, machine learning and other computer intensive cloud applications that depend on high power density solutions with efficient cooling.

The data centre boasts a highly resilient 220kV GIS substation on-site with LIL0 configuration. This project was also recently awarded a platinum rating by the India Green Building Council.

### PROJECTS & CONTRACTS IN BRIEF

Orange Business has signed a deal with the King Abdullah Financial District Development & Management Company (KAJD DMC) to design, build and run a smart city platform that will integrate and connect existing digital technologies at Saudi Arabia's prime business district, while leveraging the power of artificial intelligence and data analytics.

Xcomm has been named as a supplier on Crown Commercial Service's (CCS) Network Services 3 (RM6116) Framework on Lot4a.

Nokia has deployed a private wireless network for Husky Terminal and Stevedoring, based at the US Port of Tacoma, Washington. The deployment of secure, low latency private wireless connectivity allows Husky to concentrate on reinventing marine freight operations using innovative digital technologies to exceed customer expectations.

Transatel has won the tender organised by Toulouse Métropole to ensure the continuity of cellular connectivity services. Thanks to Transatel's multi-operator SIM cards, law enforcement and emergency services will be able to carry out their critical missions in the field, while remaining securely connected within the perimeter and beyond the Toulouse Métropole's 5G mobile private network.

# A sense of belonging

**Bruce Owen** is committed to advancing digital progress alongside environmental, diversity and community initiatives. Rob Shepherd recently caught up with him to find out more about his life and career, and his thoughts on some of the big issues affecting the data centre sector

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

BO: I joined Equinix in 2010 as a member of the EMEA corporate development and finance team. In 2013 I moved to California and assumed various leadership roles within the organisation including heading the corporate financial planning and analysis team, serving as chief of staff to the CEO, acting as vice president of business operations and instrumentation and, most recently, as an adviser to the global executive team through my role as vice president for employee and community impact.

Now, as managing director for Equinix in the UK, I collaborate closely with our customers and partners to advance digital transformation and foster the ongoing expansion of our UK business. One of my key focus areas is on Equinix's culture and people, leading Equinix's worldwide diversity and inclusion, wellbeing and community impact initiatives. Last year, I was very proud to be involved in launching

the Equinix Foundation to advance digital inclusion and equitable access around the world.

**RS: How and why did you decide to embark on a career in the data centre sector?**

BO: I had been working in the media and advertising industry when my former boss, who had become the vice president of finance for EMEA at a data centre company, reached out to me. I fell in love with the industry from day one. The fast paced, technology driven environment and its vital role in powering modern businesses captivated me. It has been a

rewarding journey so far, and I'm eager to continue contributing to its growth and development.

**RS: What differentiates a good data centre from a not so good one?**

BO: I view data centres not in terms of being good or bad, but rather their ability to fulfil customer needs effectively. It boils down to distinguishing between data centres that successfully meet their customers' requirements and those that

**'While the data centre industry facilitates invaluable interconnectivity and digital inclusion, it is essential we actively tackle the obstacles that prevent marginalised communities from benefiting from modern technological developments.'**



fall short in doing so. I believe that these are the main factors that customers often look for:

- **Operational excellence**

A good data centre excels in all aspects of operations – from robust physical security measures to ensuring high uptime of services. It also provides exceptional customer support and services to address any issues promptly and efficiently.

- **Interconnection and partnerships**

A data centre should offer seamless interconnection to critical business partners, including service providers and enterprises. Additionally, having cloud on-ramps available is a significant advantage, enabling smooth access to cloud services.

- **Strategic location**

A data centre's location plays a crucial role in its effectiveness. Being strategically located close to the user base ensures low latency and enhances overall performance for end users.

- **Sustainability initiatives**

Addressing the growing concern for sustainability, a good data centre proactively adopts eco-friendly practices and implements innovative strategies to reduce its environmental impact. This

approach aligns with the sustainability strategies of tech leaders and businesses, making it more attractive to customers.

If a data centre manages to fulfil these factors it will provide value well beyond the cost customers pay for its services. This is what I consider a good data centre.

**RS: How will investment in edge computing change the profile of the data centre over the next few years?**

BO: Investment in edge computing will reshape the profile of data centres by providing customers with the opportunity to benefit from multicloud networking.

This approach allows for the utilisation of private, public or hybrid cloud locations. With edge computing's distributed architecture, data processing and service provisioning occur in close proximity to users, enabling the development of innovative applications that cannot tolerate latency issues.

Furthermore, network modernisation

facilitated by edge locations empowers IT teams to swiftly deploy services in new areas without the need for additional hardware. This implementation of an infrastructure modernisation strategy enhances business agility and allows for rapid scalability in a matter of minutes.



## **RS: How will artificial intelligence (AI) need to be optimised to become more efficient, trusted and sustainable?**

BO: In the data centre industry, advancements in AI contribute to driving digital transformation and meeting customer needs. By addressing cybersecurity, promoting efficiency and embracing sustainability, AI can become more efficient, trusted and sustainable, supporting its integration into various applications and technologies and bringing with it a wealth of opportunity.

Equinix's recent Global Tech Trends Survey 2023 reveals a surge in AI adoption across various industries and business functions. An overwhelming 85 per cent of IT decision makers polled globally are actively pursuing the advantages offered by AI technology. However, alongside the benefits, the adoption of AI also brings considerations around efficiency and trustworthiness.

Optimising AI requires several key deliberations. Firstly, enhancing AI algorithms is crucial, focusing on trust, accuracy and embedding ethical considerations. Addressing cybersecurity risks is also important, with organisations needing to prioritise data security and implement robust encryption and access controls.

Promoting efficiency in AI models involves designing experiments, embracing modular and compute efficient approaches, and adopting sustainable practices throughout development. We need to consider the placement of AI

**'I view data centres not in terms of being good or bad, but rather their ability to fulfil customer needs effectively.'**

workloads to optimise efficiency and sustainability. Non-latency sensitive AI tasks, which do not require real time processing, can be strategically located in cool climate regions. By doing so, they can capitalise on off-peak hours when there is less competition for energy and cooling resources.

In addition, the cooling needs of AI workloads may be beyond the capabilities of the air cooling methods traditionally used for conventional IT workloads. Enterprises

will likely need high density cooling methods such as liquid cooling instead. Liquid cooling helps in maintaining optimal temperatures for AI chips, preventing overheating and preserving performance.

As an industry, we should all be encouraging sustainable AI practices, such as hosting hackathons and tracking carbon footprint reduction. These are just some of the ways that can drive innovation and foster a culture of sustainability.

## **RS: Is the battle for the energy efficient data centre being won and is it really possible to have a sustainable digital infrastructure?**

BO: The battle for the energy efficient data centre is not won yet, but it is certainly being fought, and progress is being made towards achieving more sustainable digital infrastructure. With the growing emphasis on sustainability, it is no longer adequate to meet rising demands for data centres by increasing energy consumption. As a result, energy efficient data centres are now more crucial than ever.

Through our data centre and service

transformation programmes, Equinix works closely with companies to optimise their data centre requirements. For instance, in collaboration with a wealth management company in the UK, Equinix was able to reduce its nine rack requirement to six racks, resulting in a 30 per cent reduction in space and cooling area. As a company, we have accomplished a remarkable 23 per cent reduction in operational emissions from our 2019 baseline.

While there is still progress to be made, I am optimistic about the future of our data centres. During my tenure, I remain committed to advancing sustainability through innovative approaches and collaborations.

**RS: Is enough being done to encourage more women to have science, technology, engineering and mathematics (STEM) based careers and, if not, what would you like to see happening?**

BO: It is important to challenge the gender imbalance in the tech industry and create a more inclusive workspace to support women. This involves leading with vulnerability and empathy, as well as taking courageous actions to drive change. Increasing the representation of women in tech roles not only bridges the talent gap, but also has the potential to boost Europe's gross domestic product.

In the UK, our apprenticeship program boasts a significantly high percentage of female representation. Looking ahead, our global goal is to achieve a 30 per cent representation of women in our overall workforce by 2027. At Equinix, we are deeply committed to diversity and inclusion. As part of this dedication, in 2022 we introduced a modifier to short-term incentives for senior leaders at the vice president level and above, which is based on their progress in meeting our

diversity objectives.

To further our commitment to empowering women in tech, Equinix announced a partnership with World Pulse, a women led global social network, earlier this year. This collaboration aims to advance digital inclusion for women and create a more equitable future. We specifically support World Pulse's Her Digital Leadership Alliance, which connects women in 50 countries and helps them develop digital skills.

**RS: What advice would you give a young person looking to start a career in the data centre sector?**

BO: It is a wonderful sector to be involved in. Data centres are the engine room of the digital economy, the vital piece that keeps our everyday lives going. There is a wide array of careers and opportunities in the fast evolving and growing data centre industry.

And when you do enter the industry, it is important that you do not in only focus on seeking a level or a title. Some of the best advice I have heard and try to live by, is to simply 'seek impact'. If you do that every day for your customers, for your employees and for your investors, it will have a compounding effect which should result in career growth.

**RS: If you could change one thing about the industry that you work in, what would it be?**

BO: If I could change one thing about the industry I work in, it would be to address the digital divide resulting in lack of global digital inclusion. While the data centre industry facilitates invaluable interconnectivity and digital inclusion, it is essential we actively tackle the obstacles that prevent marginalised communities from benefiting from modern technological developments. ■

## Excel Networking Solutions

Excel Networking Solutions has launched a range of cabling products for external installations.

It includes a **Category 6A U/FTP S-Foil cable**, which comes with a double sheath with a PE Fca outer sheath for the external part of the installation. By stripping back the outer sheath, the inner B2ca internal cable is revealed with its own unique part code. This means an installer can easily use the same cable without the need for terminating and adding a demarcation point at the entry point to the building. This cable is perfect for access control, access points, intercoms and CCTV solutions, or anywhere cabling needs to be installed both externally and internally. The



time saving gained with this cable will also allow customers to save money and make installations so much simpler.

Other products include a **Category 6A IP68 coupler**, a **Category 6A IP67 bulkhead coupler** and **Category 6A external rated patch leads** in **0.5m** and **1m**, so installers can connect

external devices with the knowledge that they are watertight.

For more information about the new Excel products and the range available from Mayflex **CLICK HERE**, to contact the sales team call 0121 3267557 or to send an email **CLICK HERE**. [www.mayflex.com](http://www.mayflex.com)

## Fluke Networks

Every time you complete the installation of a structured cabling system, you can choose whether to certify it. All links in the system should be tested in some way to make sure that they're connected properly, but is it necessary to measure and document the performance of every link?

All cable suppliers say that if you want a long-term warranty on your installation,

certification is required. There are other benefits for you as the installer, too – protection in case of disputes, quality control, even your reputation among your customers and the competition.

**CLICK HERE** to learn more about cabling certification and why it's so important.

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

**Gold Support**

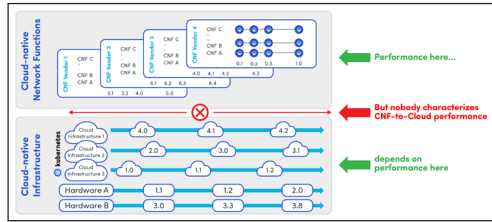


# Spirent Communications

Spirent Communications has announced the industry's first fully cloud native solution to help communication service providers (CSPs) and cloud native network function (CNF) vendors ensure resilient 5G services. Spirent CloudSure evaluates and validates CNF resiliency within 5G networks with comprehensive testing capabilities to help ensure reliable service delivery, while reducing operational costs and optimising customer experience.

CloudSure has been engineered to help network operators deliver robust and resilient 5G services to end users in the complex and highly dynamic cloud native world. It enables:

- **Reliable service delivery.** Confirms 5G cloud native network functions operate reliably under the most challenging cloud conditions for uninterrupted service delivery and long-term revenue growth.
- **Reduced operational costs.** Optimises resource utilisation and validates



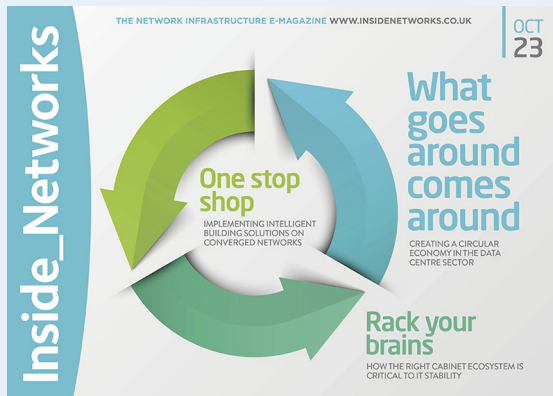
complex fault recovery mechanisms to avoid costly outages and 5G service interruptions, while reducing operating expenses.

- **Enhanced customer experience.** Ensures resilient 5G service design, configuration and performance to deliver high quality user experiences to improve customer satisfaction and retention.
- **Competitive advantage.** Enables reliable, high performing 5G services that meet customer expectations for a competitive edge in 5G and to attract new customers.

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

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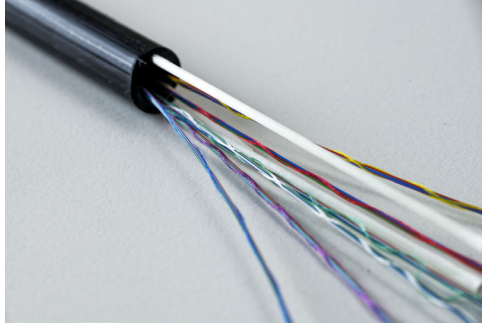


## ACOME Group

Easy to deploy, cost effective and sustainable, ACOME Group's new ultra-lightweight 96 fibre cable is a gamechanger for the UK market.

Constructed with ACOME's patented nanomodule technology, the PIA-compliant cable is specifically designed to numb the pain points network

builders in the UK face. Grease free, high density and consisting of modules of 12 fibres, installers can experience reduced installation times by an average of three hours and lower maintenance times for every kilometre of cable deployed. The



nanomodule design also saves thousands of pounds per kilometre deployed in cost savings, and one tonne of carbon per 3km of installed cable.

The product was developed following the success of the 72 fibre version of ACOME's nanomodule cable, used by network builders

including FullFibre. By partnering with ACOME, FullFibre was able to quickly and cost effectively deploy a 26km long fibre network spine for the Hertfordshire region.

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

64

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## Allied Telesis

The Allied Telesis **TQ6702 GEN2-R** wireless access point router combines enterprise class Wi-Fi 6 (IEEE 802.11ax) with secure virtual private network (VPN) routing for an innovative LAN and WAN solution. It facilitates a simple, powerful and secure wireless network for small businesses or enterprises with multiple locations.

The TQ6702 GEN2-R is an ideal solution for multi-tenant offices and premises, as well as distributed retail and hospitality locations where businesses can fully automate and manage their own or customer networks. This is achieved remotely using Vista Manager, Allied Telesis's management platform for rapid installation and automated network monitoring.

The TQ6702 GEN2-R includes:

- New user authentication with captive

portal.

- Zone based firewalling.
- IPsec site to site VPNs that connect branch locations to head office, while SSL/TLS remote worker VPNs allow secure access to digital business resources.
- All units automatically back-up using AMF Plus network automation, allowing plug and play replacement, and simplified visual management on Vista Manager's network map.



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

65

# Inside Networks

2024 CHARITY GOLF DAY 22ND MAY

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

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

### Playing the Hanbury Manor PGA Championship Course:

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

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

Live Scoring sponsorship is available.

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

There will also be opportunities for sponsorship of all aspects of the day – all raising money for Macmillan Cancer Support – since 2005 this industry event has raised just under £100,000 through our charity golf events!

Supporting:

**WE ARE  
MACMILLAN.  
CANCER SUPPORT**



Indoor Simulation  
Competition

The cost of a 4-ball team will be  
£790 (+VAT).

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

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

Organised by:

Promoted & Supported by:



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

# All you need to know

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# On a level

Wendy Shearer of Pulsant explains why the edge is critical to the UK's regional regeneration

▶ The annual London Tech Week highlighted the opportunities in tech and innovation across the country's capital. Recent research found that the city outperformed its transatlantic counterparts, New York and San Francisco, to be named the number one destination for global tech investment in the last decade.

## ANYTHING IS POSSIBLE

Whilst the possibilities are endless, many regions outside of London have struggled to attract the investment necessary for a revival in economic growth and prosperity. They have lacked the infrastructure that makes it possible for businesses and public organisations to fully avail themselves of artificial intelligence (AI), new software as a service (SaaS) applications and the significant opportunities of edge computing. In today's hyperconnected world, poor technology infrastructure places regions beyond the south east at a disadvantage.

Initial steps have been made to acknowledge this problem – look no further than the Spring Budget announcement earlier this year, which unveiled 12 new investment zones, with funding and tax breaks to support digital technology and advanced manufacturing. 5G rollout is also well underway, as is fibre to the premises. Many areas already are benefiting from the £5bn Project Gigabit digital infrastructure programme, aiming to bring superfast broadband to all areas of the UK.

## STEP CHANGE

Devolved government organisations have taken this a step further and are set to deliver digitally transformed services in health and social care, education, housing and transport closer to the user. This could radically improve the lives of citizens, provide the seedbed for successful start-ups, and attract established businesses to relocate or set up new offices or facilities.

In other words, the smart city can be almost everywhere. However, this can only happen if regions have edge computing infrastructure that brings the cloud to them through a network of strategically sited, dispersed data centres. By exploring the opportunities of edge infrastructure, regions can ensure they are ahead of the curve and reaping the technological benefits ahead.

## BRINGING THE CLOUD

Edge infrastructure is essential for processing data closer to where devices generate it to achieve super low latency with high bandwidth. It gives enterprises the ability to access applications and automation that will transform their efficiency and create new opportunities. And it also enables application and service providers to find new customers by meeting demand from businesses seeking digital transformation.

As businesses and public organisations use more applications to achieve greater efficiency and adopt new models of operation or service, data volumes will increase and the demand on networks will grow quickly and significantly. With access



to edge infrastructure, organisations gain a huge amount of flexibility that is more efficient and, ultimately, more cost effective. They can decide what they want to keep on premises and which workloads they want to deploy in the cloud by having access to low latency connectivity in a data centre that is physically much closer than the hubs of the major cloud companies.

We must recognise that low latency has long been a fundamental requirement. Global research by IDC from 2021 found 75 per cent of enterprises required sub-five millisecond latency for their edge initiatives. By keeping data in a regional data centre, an organisation can process that information more quickly and in a way that is more cost efficient than transmitting every byte to the main cloud providers.

## GROWING UP

With access to high speed, high capacity connectivity and edge infrastructure, a business can leverage network investment to grow new edge based products and services, irrespective of its location. Citizens in

‘The most effective businesses today and their relationships will be energised and broadened by edge computing, building ecosystems around software providers to find clients in a

regions with edge infrastructure will benefit from economic regeneration, new employment opportunities and improved quality of life. The right infrastructure and networks are already unlocking digital creativity around the tech hubs like the Edinburgh-Glasgow corridor, Manchester and the north east, where there are many developers.

Data on its own has limited utility, but access to edge infrastructure enables





are webs of relationships. These are broadened by the power of edge computing and regions, enabling, for example, any area of the world.’

developers to manipulate and analyse it, leading to the creation of new applications. This is part of the vision of cities like Manchester, where the Digital Strategy up to 2026 acknowledges that access to ‘better quality, higher frequency data will allow start-ups, small to medium sized enterprises (SMEs) and social enterprises to build new applications and provide new insights, providing opportunities for commercialisation’.

## CASE STUDY

With fully functioning edge infrastructure, the implementation of Industry 4.0 and AI technologies becomes possible. Highly automated smart port operations using digital twins to run scenarios will become more widespread.

Real time, high resolution, multiplayer video gaming will be available anywhere. Regional logistics businesses can use new data driven capabilities to operate highly complex supply chains, while smart agricultural technologies revolutionise yields and sustainability. Warehouse management, mining operations and refining processes will transform their efficiency through extensive automation, monitoring and predictive maintenance.

The availability of edge through regional data centres means companies can implement complex discrete manufacturing and heavily automated construction seamlessly. Businesses will be able to scale successfully without having to relocate. The UK’s half a million developers can build applications, and companies can market them without moving to the south east. Similarly, designers and engineers will collaborate seamlessly in real time, irrespective of where they are.

## DRIVING FORCE

In healthcare, edge infrastructure will bring medical expertise to even the most remote areas through remote diagnosis



and monitoring solutions. Public services from public transport and road networks, car parking and waste collection will achieve far greater efficiency, along with electricity and water provision.

Meanwhile, local and devolved governments will be able to deliver smart solutions directly or through a partner ecosystem of specialist providers in infrastructure, transport, health and content delivery. This will support the creation of sustainable, efficient, effective public services, ensuring no one is left behind, wherever they are.

While the focus needs to remain on completing network rollouts, parallel attention and investment must also go into the applications and infrastructure that will drive its utilisation. The public bodies that wish to deliver transformative services over the next few years will need to choose the right partners, working with application providers, system integrators, cloud and infrastructure providers that have a track record and capacity to deliver.

## RELATIONSHIP BUILDING

The edge is, in effect, a giant ecosystem, in line with how the world is developing. The most effective businesses today are webs of relationships. These relationships will be energised and broadened by the power of edge computing, building ecosystems around regions, enabling, for example, software providers to find clients in any area of the world. This is also how the UK will ensure its regions grow, enabling businesses to use edge platforms to provide solutions demanded by global markets. In a world that demands hyperconnectivity, the right infrastructure sucks in investment, stimulates innovation and nurtures much more dynamic communities. ■



### WENDY SHEARER

Wendy Shearer is director of smart cities and ecosystems at Pulsant. Her key responsibility is to ensure Pulsant's smart city strategy and plans are focused on enabling customers and partners to benefit from the Pulsant edge infrastructure. Throughout her career, Shearer has used her technology expertise to deliver value to customers. Now, with edge computing, she is working to unlock the new opportunities that 5G and edge digital infrastructure can deliver to help businesses benefit and grow.

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