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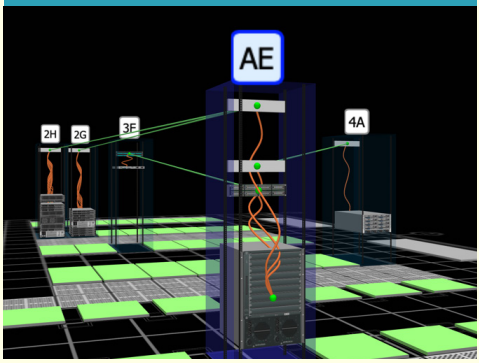

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CHALK HILL MEDIA

I've been giving a lot of thought to a comment from R&M's CEO, Michel Riva, in last month's Question Time. He said, 'The current situation has made it clearer than ever that IT and sufficient local bandwidth at home ought to be considered a basic necessity, just like electricity or water.' It would certainly appear that the network infrastructure's position as the 'fourth utility' is truly undeniable – what do you think?

Meanwhile, as more people begin to return to their places of work, the need to make them safe in order to prevent the spread of coronavirus is of paramount importance. Infrared cameras, air quality sensors, smartphone based access control and biometrics are just some of the technologies being increasingly deployed. For this month's Question Time we have assembled a panel of industry experts to explain whether operating smart building services technology over a network infrastructure can help monitor and automate processes in the most effective ways possible. You can read their opinions by **CLICKING HERE.**

Also in this issue we have a special feature dedicated to data centre infrastructure management (DCIM). Herman Chan of Sunbird Software answers some of the common questions surrounding its specification and use, while Michael Akinla of Panduit explains how it can control and optimise cooling. **CLICK HERE** to read Herman's article and **CLICK HERE** for Michael's.

Green networking continues to be of significant interest to industry professionals and we have with two articles on the subject. Stu Redshaw of EkkoSense looks at how green networks can be extended to the edge and Alexandra Nacken of Nexans examines how green network infrastructures can help meet future demands in a responsible way. **CLICK HERE** to read Stu's article and **CLICK HERE** to read Alexandra's.

I hope you enjoy this issue of Inside_ Networks and if you'd like to comment on any of these subjects, or anything else to do with enterprise and data centre network infrastructures, I'd be delighted to hear from you.

Rob Shepherd
Editor

Get Ready for PoE!

In the new world of intelligent buildings, the number of devices that will be connected AND powered via IP will grow exponentially. New developments such as the digital ceiling, will drive this growth.

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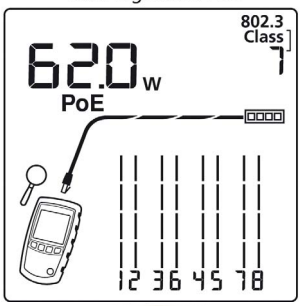

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Record numbers of women in UK IT sector but black women still under-represented

326,000 women are now working in IT roles across the UK – a record 20 per cent share of the specialist IT workforce, according to new analysis from BCS, The Chartered Institute for IT. The proportion of women has risen to 20 per cent from 17 per cent at the same point in 2019.


Julia Adamson

Over the past year there has also been a small increase in the percentage of black women working in IT positions, from 0.3 per cent in 2019 to 0.7 per cent in 2020, according to the study based on Office for National Statistics (ONS) employment data. As a whole, there were 31,000 black people working in IT positions across the UK in the second quarter of the year – 1.9 per cent of the total IT specialist workforce.

Julia Adamson, director for education at BCS, said, 'The UK economy needs a diverse IT industry to turbocharge its recovery and these figures are an important milestone for women in tech. But there is still some way to go towards true equality in our field, as black women make up less than one per cent of IT specialists. Continuing to close the diversity gap is key to an IT industry that is professional, highly skilled and ethical.'

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

According to BSRIA's latest World Market for Structured Cabling report, Excel Networking Solutions is the number one cabling brand in the UK market, with a 21 per cent share.

Andrew Percival, Excel's managing director, commented, 'This is a fantastic achievement and I'm proud of everyone in the team who has played a part in pushing Excel to reach this point. The market is very competitive and the industry has come through a period of significant change over the last 12-18 months, so for Excel to come out as the frontrunner is an exciting milestone. I would like to thank our Excel customers, old and new, for their continuous support and am sure this market leading position will assist them in expanding their own businesses, as acceptance of our solution across all verticals continues to grow.'


Andrew Percival

Network 'as a service' adoption to grow by 41 per cent over the next two years

IT leaders in Europe, Middle East and Africa (EMEA) are now investing more in cloud-based and artificial intelligence (AI) powered networking technologies as business recovery plans take shape, according to research from Aruba, a Hewlett Packard Enterprise company.


Morten Illum

Responding to the challenges associated with enabling a highly distributed workforce, they are looking to evolve their network infrastructure and shift away from capital expenditure investments towards solutions consumed 'as a service'. The average proportion of IT services consumed via subscription will accelerate by 41 per cent in the next two years, and the share of organisations that consume a majority of their IT solutions 'as a service' will increase by approximately 74 per cent in that time.

Morten Illum, EMEA vice president at Aruba, a Hewlett Packard Enterprise company, said, 'The workplace as we knew it has significantly changed and to support new norms such as social distancing and contactless experiences, office locations need to have the right technology in place to offer enterprise level connectivity, security and support. All this must be done in an increasingly challenging financial environment, which is spurring the trend for IT decision makers to opt for the advantages offered by a subscription model.'

Germany leads the way in adopting the IoT for industrial manufacturing

Enterprises in Germany are embracing the internet of things (IoT) in the industrial manufacturing sector, and the number of connected devices in the country is growing rapidly, according to a report published by Information Services Group (ISG).


Christian Decker

The 2020 ISG Provider Lens IoT – Services and Platforms Report for Germany finds IoT providers are offering deep manufacturing and sector expertise to Germany's industrial manufacturers. 'IoT service providers working with industrial manufacturing companies in Germany have a strong focus on the overall product development and production lifecycle,' said Christian Decker, partner and smart manufacturing lead for ISG in EMEA. 'These providers offer expertise on product design, manufacturing and factory floor optimisation, storage, logistics, maintenance services and other key areas of the value chain.'

Meanwhile, IoT solutions in Germany are becoming more complex, especially for predictive maintenance and resource management, the report says. These solutions require technical and organisational expertise and extended data analytics to deliver increased productivity, greater optimisation of resources and reduced operating costs.

Engineering services sector remains optimistic despite downturn

The latest Building Engineering Business Survey shows that 67 per cent of businesses expect their turnover to increase or remain the same in Q3 of 2020, compared with Q2, where there was a sharp drop in turnover due to the coronavirus pandemic.


Steve Bratt

60 per cent of businesses reported less turnover in Q2 compared to Q1 – the sharpest drop since the quarterly study began in 2016. However, this fall in Q2 turnover was not as large as businesses had predicted earlier in the year, during the previous iteration of the survey. Back in April, 74 per cent of respondents had predicted a fall in turnover during Q2.

Electrical Contractors' Association (ECA) CEO, Steve Bratt, said, 'The sharp downturn in turnover over Q2 was keenly felt across industry. The picture that is now emerging is one of a resilient sector that is so far weathering the storm, whilst remaining cautiously optimistic about the future. ECA is committed to supporting contractors through this period and working collaboratively with the Construction Leadership Council to deliver on the recovery plan, and to press for continued government investment and support for engineering services.'

Corning celebrates 50 years since its invention of low loss optical fibre

Corning is celebrating the 50th anniversary of its invention of low loss optical fibre. The breakthrough material, each strand thinner than a human hair, made possible the development of new technologies in data communications, video streaming, cloud computing and more.


Wendell P Weeks

In 1970 Corning scientists Robert Maurer, Donald Keck and Peter Schultz were brought together to develop a highly pure optical glass that could effectively transmit light signals over long distances – a feat that had never been achieved. Keck recalled the breakthrough and said, 'I knew something was very, very special and unique about this fibre. I hastily measured the results. It was a very short piece of fibre – we thought we got a very good measurement. I recorded in the databook "17dB/km, whoopee. We've met our goal"'.

Wendell P Weeks, Corning's chairman and chief executive officer, commented, 'Our invention of low loss optical fibre ushered in a communications revolution. 50 years ago, few could have imagined the impact of optical fibre on our world today.'

Catalyst Project launches its Green Data Centre Roadmap

The Catalyst Project has announced the publication of a new website that features its Green Data Centre Roadmap, as well as an assessment tool, a handbook and a trade directory.

The Green Data Centre Roadmap, designed to be similar to a metro map, has 15 lines and over 130 stations. It can help data centre owners, operators, design companies and investors to consider the routes and destinations they may choose to create or retrofit their data centre to be as green and sustainable as possible. In this context green and sustainable means using renewable energy solutions, reusing waste heat, being certified to appropriate standards and training staff.


John Booth

John Booth, Catalyst Project programme manager at Green IT Amsterdam, commented, 'Many data centres don't have access to all the information they need to become energy efficient and sustainable, and we felt that organisations could benefit from an easy to read diagram or infographic that can show them the way to proceed. The Catalyst Project Green Data Centre Roadmap provides information for all in the sector to understand the links and options open to them to become more energy efficient and sustainable.'

CLICK HERE to see the Green Data Centre Roadmap.

NEWS IN BRIEF

According to the Global mobile Suppliers Association (GSA), the number of 5G devices has exceeded 300 for the first time. By the end of August 401 devices had been announced.

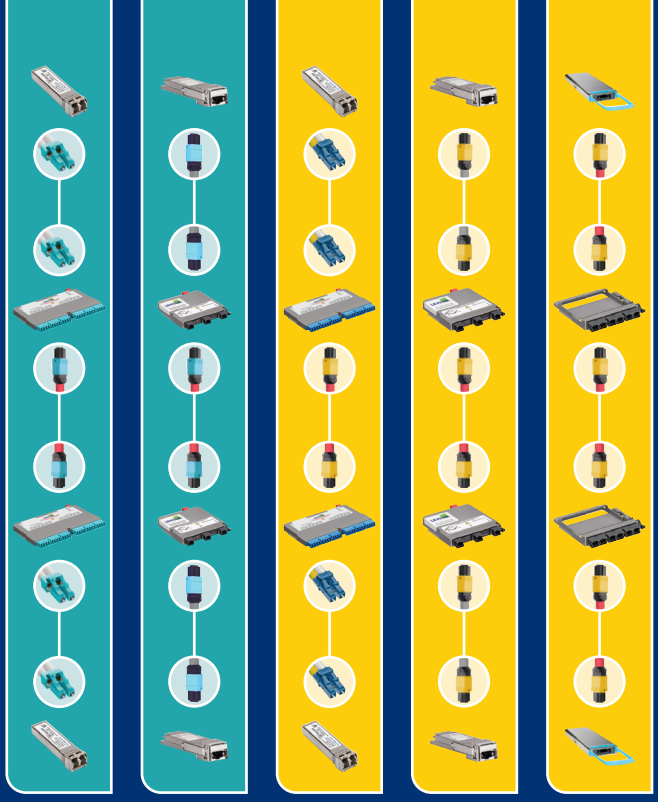
Iceotope has been acknowledged as a Sunday Times BGF 10 Green Tech to Watch in this year's Sunday Times Tech Track 100 listing.

Ericsson has agreed to acquire Cradlepoint. The investment is key to Ericsson's ongoing strategy of capturing market share in the 5G enterprise space.

According to Atlas VPN, 82 per cent of chief information security officers (CISOs) and chief information officers (CIOs) plan to implement a 5G connection in the next 6-12 months.

TelcoSwitch has entered the Sunday Times Sage Tech Track 100 league table, coming in at number 25.

IntraLAN has named Tim King as sales director. He will lead IntraLAN's growing business development team, supporting its customers as they embrace digital transformation, adopt cloud services and align their technology investments with remote working.



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Office politics

With employees being encouraged to return to their places of work, technology needs to make intelligent buildings even smarter. Inside_Networks has assembled a panel of industry experts to explain how this can be achieved and assess the role the network infrastructure plays in meeting this objective

In the pre-coronavirus era the development of energy efficient buildings designed to offer occupants pleasant workspaces that could enhance productivity seemed unstoppable. Hygiene and infection control were rarely, if ever, major considerations when it came to designing, specifying and implementing building services.

That's all changed in a big way and as lockdown eases and people slowly, and in some cases reluctantly, go back to their offices, employers need to implement measures that ensure a high standard of health and safety. This is not going to be easy, with numerous surveys highlighting that people going back to their offices are nervous, apprehensive and uncertain. For example, a YouGov study commissioned by Winckworth Sherwood found that more than three in five employees who can work from home would be happy if their office remained closed indefinitely after lockdown measures are lifted, even if there were a sustained drop in coronavirus cases.

So where does this leave the intelligent building and do we need to redefine what it is? To find an answer, Inside_Networks has assembled a panel of experts to examine the issue and assess the role of the network infrastructure in making the post-coronavirus office a safer place.

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

JIM PHELAN
DIRECTOR OF SMART BUILDINGS AT IRISYS

First, we need to answer the more important question – what is an intelligent building? In my many conversations with building operators, consultants, original equipment manufacturers (OEMs) and system integrators, there is as much disparity in the answers as there are snowflakes. No two are alike.

What concerns me about the intelligent building conversation is often the most critical element is marginalised – the building occupants. After all, why do buildings exist in the first place, whether they are intelligent or not? People occupy buildings – in fact we spend 90 per cent of our lives in them.

The pandemic has certainly accelerated conversations around creating safe and healthy building spaces for occupants to return to. Several playbooks have been developed to instruct building owners and operators on how to create this new safe and healthy building. The challenge is that no two buildings are the same – they differ in size, age, use and network infrastructure.

The IT infrastructure is the vital 'building spine', where building systems transport data, and this is the foundational component to an intelligent building. Many buildings today use this infrastructure to integrate disparate building systems such as heating, ventilation, air conditioning (HVAC) and lighting. The pandemic has taught us that we need fresh, healthy air, so this means the HVAC system needs to work harder. Does this mean the facility manager manually forces the system or do CO2/occupancy sensors detect occupants and automatically control ventilation? Do those sensors even exist and are they on the same IT infrastructure?

Building automation has traditionally been defined as mechanical system integration. However, these additional technology systems – security, card access, room scheduling, wayfinding, operational technologies and others – now need to integrate with informational technologies. These integrations need to begin with the end in mind and consider occupants, and what they truly need to feel safe and comfortable.

'WHAT CONCERNS ME ABOUT THE INTELLIGENT BUILDING CONVERSATION IS OFTEN THE MOST CRITICAL ELEMENT IS MARGINALISED – THE BUILDING OCCUPANTS. AFTER ALL, WHY DO BUILDINGS EXIST IN THE FIRST PLACE, WHETHER THEY ARE INTELLIGENT OR NOT?'

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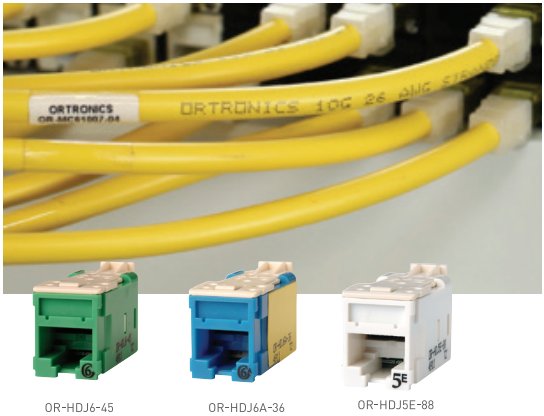

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KIRK KRAHN

SENIOR PRODUCT MANAGER AT LEVITON NETWORK SOLUTIONS

It may be premature to point to definitive smart building trends based on the effects of the pandemic. However, there are signs that some building owners have accelerated adoption of smart technologies as a response. There are numerous ways businesses are using these solutions:

- Infrared cameras recently installed at some airports are used to track body temperature, while offices and factories have installed screening kiosks to measure temperature when employees enter a building.
- With building management systems in larger facilities or factories, issues can be identified and resolved remotely, requiring less human interaction and maintenance.
- Air sensors can check air quality, allowing for quick adjustments to provide proper ventilation.
- Occupancy analytics can measure flow of people and alleviate congested areas, or pinpoint areas that require more regular cleaning.
- Doors and elevators can be automated to reduce high touchpoints such as elevator buttons and door handles.

Many building operations are currently in a state of flux due to fewer visitors or work from home adjustments. However, as companies install smart technologies like the examples above to address return to work requirements or more building traffic, the right infrastructure will be important to handle added internet of things (IoT) devices and potential increased bandwidth needs over the long-term.

New workplace installations or renovations may benefit from a more flexible cabling infrastructure that can adapt to changes and be faster to install or convert. One such solution is a zone cabling architecture, where cables are routed from a telecommunications room to appropriately placed zone enclosures or telecommunications enclosures. Cabling is then run from a zone enclosure to work areas. If work areas or smart devices are added, modified or moved, cabling need only be reconfigured back to the consolidation point rather than all the way to the telecom room.

In addition, many smart sensors, cameras and devices operate via power over Ethernet (PoE). I recommend using a cabling infrastructure that is optimised for PoE applications, such as the ability to limit temperature rise in connectors and larger cable bundles. And it is important to consider higher density patching and connectivity to anticipate additional smart devices on the network over time. This creates a much more flexible infrastructure for dynamic environments and the high probability that network configurations will change as a result of the pandemic.

‘NEW WORKPLACE INSTALLATIONS OR RENOVATIONS MAY BENEFIT FROM A MORE FLEXIBLE CABLING INFRASTRUCTURE THAT CAN ADAPT TO CHANGES AND BE FASTER TO INSTALL OR CONVERT.’

MIKE HOOK
EXECUTIVE DIRECTOR AT LMG

Coronavirus has forced occupant wellbeing and health up the corporate agenda and focused the lens on smart building features that improve the user experience. We're now seeing more smart buildings equipped with technologies that provide occupants with safer, healthier and more secure places to work. These include thermal cameras to detect fever in employees, access control features to monitor who is entering or exiting the building, operational technology (OT) based HVAC to control air quality, and desk or room booking facilities to manage occupancy levels.

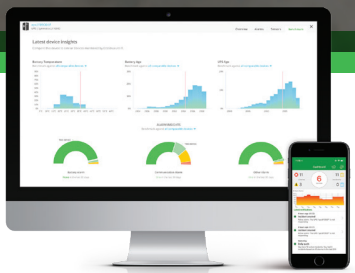
While having thermal cameras and access control features is useful, the true value comes from the data they generate – enabling businesses to analyse spikes, spot trends and use these insights to make informed business decisions. For example, by monitoring who is coming in and out of a building, companies can implement track and trace policies to map the movement of those potentially infected by the virus. If a fever is detected through the thermal cameras, an alert can be issued to the employer and the employee sent home – which not only protects their wellbeing but the wellbeing of others around them.

IP-based networks provide businesses with a connected, holistic view of all of the data they need in order to make the building work better for them. By focusing on the network, companies are able to create a much more fluid approach, which prioritises interoperability and multiple connected systems, rather than one technology. This means they'll be able to collect more data and generate more insights into the building, therefore enabling them to deliver more value to users.

What makes this approach so powerful is the exponential increase in information it generates. As a result, building operators can access and utilise cross-referenced insights from a number of sources, which, in turn, facilitates predictive maintenance and optimised use of space and resources. It's also paving the way for hyper-personalised experiences for users, where user data is converted into bespoke experiences – improving the safety, security and wellbeing of each occupant.

'BY FOCUSING ON THE NETWORK, COMPANIES ARE ABLE TO CREATE A MUCH MORE FLUID APPROACH, WHICH PRIORITISES INTEROPERABILITY AND MULTIPLE CONNECTED SYSTEMS, RATHER THAN ONE TECHNOLOGY.'

VISIBILITY



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MIKE HOLMES

CHANNEL MARKETING MANAGER AT NEXANS

With the coronavirus pandemic still ongoing, gauging its long-term consequences is difficult. However, we can say that maintaining a healthy indoor environment with a focus on safe ventilation, occupation and hygiene is vital. This is both for the 'few' who have been left to 'hold the fort' during the crisis, and the 'many' when people hopefully start to return.

In recent months, many office buildings have been left largely vacant, with just a skeleton staff in attendance. This introduces a variety of challenges.

Security is a key issue, with alarm systems and CCTV becoming increasingly important. This also applies to monitoring and controlling access systems to restrict entry to certain parts of a building. There are also safety aspects to consider if a building is largely unoccupied, as it's important to know who is in a building and where they are, as people may need to found, evacuated and accounted for in the event of an emergency. Smart systems based on IP connected sensors and actuators can help reduce costs and prevent wasting power. For example, by closing down unoccupied building sections so HVAC and lighting are not used.

Looking at the longer-term impacts, it's likely that workspaces will continue to become more flexible – that means more smart desking, hot desking, and multi-use spaces. Remote monitoring and admin make management easier and reduce cost, as support staff don't need to visit the site, for example. If ongoing measures mean offices remain only partially occupied for some time, building IoT tools based on LAN and IP connectivity can support optimised occupation. This makes it feasible to automatically restrict the number of people entering certain areas to support social distancing measures.

By connecting a wide variety of devices to a single network it becomes possible to take a far more holistic approach to automate the implementation and management of in-building data and power infrastructure, occupancy monitoring, and building control and security systems. Not only does this provide the necessary safe environment, but has the potential to reduce facility costs and improve flexibility of workspace usage.

'BY CONNECTING A WIDE VARIETY OF DEVICES TO A SINGLE NETWORK IT BECOMES POSSIBLE TO TAKE A FAR MORE HOLISTIC APPROACH TO AUTOMATE THE IMPLEMENTATION AND MANAGEMENT OF IN-BUILDING DATA AND POWER INFRASTRUCTURE, OCCUPANCY MONITORING, AND BUILDING CONTROL AND SECURITY SYSTEMS.'

ANDY HIRST

MANAGING DIRECTOR CRITICAL INFRASTRUCTURES AT SUDLOWS

It is clear that while medication, increased hygiene and social distancing measures are vital in the battle against coronavirus, technology is also clearly essential – from the use of virtual meetings through to helping us to keep safe distances, reducing physical contact with each other and preventing surface cross contamination.

For many years, intelligent buildings and mission critical environments with remote monitoring and controlling have demonstrated that this is the way forward, with human intervention – which could potentially compromise the environment – being reduced. Although these technologies and innovations have been developed mainly for increasing efficiencies and reducing risk, the fact that they have reduced or even removed the need for human intervention has eliminated the need to directly touch surfaces such as light switches along with other controls – even enabling some facilities to continue functioning as unmanned dark sites.

Smart buildings and intelligent facilities have come a long way in terms of the technologies they use. The introduction of artificial intelligence (AI) has helped to reduce cross contamination but it does seem like there is a reduced budget for the development of some of these technologies at the moment. Sudlows has always worked with industry leading partners to assist with some of these innovative technologies but at the moment it does feel as if research and development budgets are being diverted to support other parts of businesses, or even frozen due to nervousness in the economy.

One thing is for sure as we come out of these uncertain times – some of the intelligent systems initially developed to improve efficiencies are vital tools in identifying potentially unforeseen dangers, due to their ability to improve surface hygiene and reduce cross contamination. As a result I can only see more budget being allocated into the field of intelligent buildings.

> 'AT THE MOMENT IT DOES FEEL AS IF RESEARCH AND DEVELOPMENT BUDGETS ARE BEING DIVERTED TO SUPPORT OTHER PARTS OF BUSINESSES, OR EVEN FROZEN DUE TO NERVOUSNESS IN THE ECONOMY.'

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BARRY ELLIOTT
DIRECTOR AT CAPITOLINE

I recently conducted an audit of the headquarters building of a large county council. The purpose was to identify the location of a new computer room that would also house the building control systems. I might as well have done the audit on a Christmas morning as the place was so deserted. A few months ago they were strapped for space but now I could have located the new computer room in the members' debating chamber for all anybody would have noticed.

The question is, therefore, how do we get everybody back? I predict that one third of office workers will never come back but what can smart building services do to persuade the other two thirds that want/have to come back to the office?

One of the answers is intelligent control of building ventilation. The UK has some of the most poorly ventilated buildings in the world and it's clear to me that most building users have a hazy understanding of the difference between air conditioning and ventilation.

Before the coronavirus pandemic there were many papers published on the effects of carbon dioxide and volatile organic compounds (VOC) build-up on the mental performance of workers and students. With coronavirus we now have extensive studies on the methods of transmission by droplets, 5-10 microns, and by the much less understood aerosols – i.e. anything smaller. The science now seems to suggest that the vast majority of infections arise indoors in poorly ventilated spaces or areas where an air conditioning system just circulates the same air.

Building air quality control, with air exchange rates exceeding 10 litres per second per occupant and filtration to the EN ISO 16890 standard, is the only way forward to make buildings attractive, habitable and commercially viable again. A few modern buildings do this already but this is an ideal opportunity to up the intelligence of the existing building stock with comprehensive structured cabling and building management systems, and make automatic ventilation control the 'must have' parameter.

> 'THIS IS AN IDEAL OPPORTUNITY TO UP THE INTELLIGENCE OF THE EXISTING BUILDING STOCK WITH COMPREHENSIVE STRUCTURED CABLING AND BUILDING MANAGEMENT SYSTEMS, AND MAKE AUTOMATIC VENTILATION CONTROL THE "MUST HAVE" PARAMETER.'

DCONGREEN joins the EkkoSense global partner network

Benelux-based DCONGREEN is the latest addition to the EkkoSense global partner network, with the EkkoSoft Critical data centre monitoring solution offered to the company's client base.

Dean Boyle, CEO of EkkoSense, said, 'We are obviously delighted to welcome DCONGREEN to the EkkoSense partner network, and we look forward to growing our presence across both Belgium and the broader Benelux region. Our EkkoSoft Critical solution is already delivering impressive benefits for organisations worldwide, and we have a proven record of helping our customers to reduce their data centre energy cooling costs by some 20 per cent. It will be great to see organisations working with DCONGREEN and taking advantage of our software's powerful capabilities.'

Andy Murray and Simon Jacobs join Mayflex

Mayflex has made two key appointments, with Andy Murray joining as infrastructure field sales account manager and Simon Jacobs in the role of audiovisual (AV) market manager.

With responsibility for the M25 corridor, Murray comes to Mayflex with extensive knowledge and experience, having previously worked for Comtec and TE Connectivity. In his newly created position, Jacobs will be responsible for developing and introducing a range of passive AV products and accessories to add to the Mayflex product portfolio.

Ross McLetchie, Mayflex's sales director, said, 'At a time when many of our competitors are making redundancies, we are taking the opposite approach and strengthening our team. This allows us to actively help, support and advise our customer base and continue to adapt and change to ensure that we succeed in these unprecedented times. The appointment of Andy and Simon is another example of this.'

Siemon launches its new TechTalk webinar series for network infrastructure professionals

Siemon has launched its new TechTalk webinar series to help IT network infrastructure professionals stay up to date with the latest trends and technologies in the data centre and intelligent building markets.

The series kicked off with a TechTalk on high speed interconnects and the benefits of incorporating these point to point cabling assemblies into data centre architecture to enable high-speed, high volume data transmission at the data centre edge. Next in line is a TechTalk on the latest Wi-Fi 6 wireless standard, which takes place at 13.00 CEST on 22nd October.


Lee Funnell

'Every month one of Siemon's subject matter experts will deliver a new TechTalk with each one zooming in on a specific trend or development that we are seeing in the data centre and intelligent building environments,' said Lee Funnell, head of technical services group at Siemon. 'Our goal is to help network managers, designers and installers respond to the latest developments with the right decisions on infrastructure design and media selection to help them get the maximum from their network infrastructure.'

CHANNEL UPDATE IN BRIEF

Unisys has appointed Simone Morris as cybersecurity business development director and Jill Wilson as senior business development lead.

Paessler and Flowmon Networks have integrated their solutions to bring together comprehensive IT monitoring capabilities with artificial intelligence powered analysis and advanced security features.

Nutanix has announced a new partnership with Microsoft that will enable both companies to deliver a hybrid solution with seamless application, data and license mobility, as well as unified management across on-premises and Azure environments, using Nutanix Clusters on Azure.

Deloitte Digital has joined the Twilio Build partner program as a premier Global Systems Integrator (GSI).

Silver Peak has announced a new certified deployment partner (CDP) programme, enabling select partners to resell and deploy the Unity EdgeConnect SD-WAN edge platform.

DATA CENTRE INFRASTRUCTURE MANAGEMENT

FOUR WORDS THAT PROMISED SO MUCH BUT HAVE ULTIMATELY DELIVERED SO LITTLE... UNTIL NOW

Since entering common parlance more than a decade ago, the phrase – and the smorgasbord of "solutions" pitched under its banner – have become ingrained in the psyche of those they should be serving for all the wrong reasons.

The acronym DCIM is greeted with derision, its technologies shunned in favour of spreadsheets and its reputation tarnished by a legacy of ineffective deployments.

And yet forecasters are still predicting substantial DCIM dividends.

Why?

Because the ideology behind DCIM is sound and relates to a very real need.

There has, however, been a capability chasm between purpose and product, with platforms failing to grasp the entirety of the data centre environment and the contribution each component within it makes to performance and optimisation.

Beefed up building management systems and overpriced asset registers fall well short of the brief. The "management" aspect of the DCIM moniker has been largely missing and the disconnect between oversight of building facilities and computing, storage and networking equipment is alarming.

A fit-for-purpose DCIM must do more than monitor systems in isolation if reputations are to be repaired. It should be easy to implement and integrate, intuitive to use, provide a single source of truth in real-time and monitor activity while focusing on the management, connectivity and automation of every element of the data centre ecosystem.

It should justify its procurement by delivering measurable cost and time efficiencies and safeguard against downtime.

It should be XpedITe

A next-generation solution, XpedITe is re-defining DCIM.

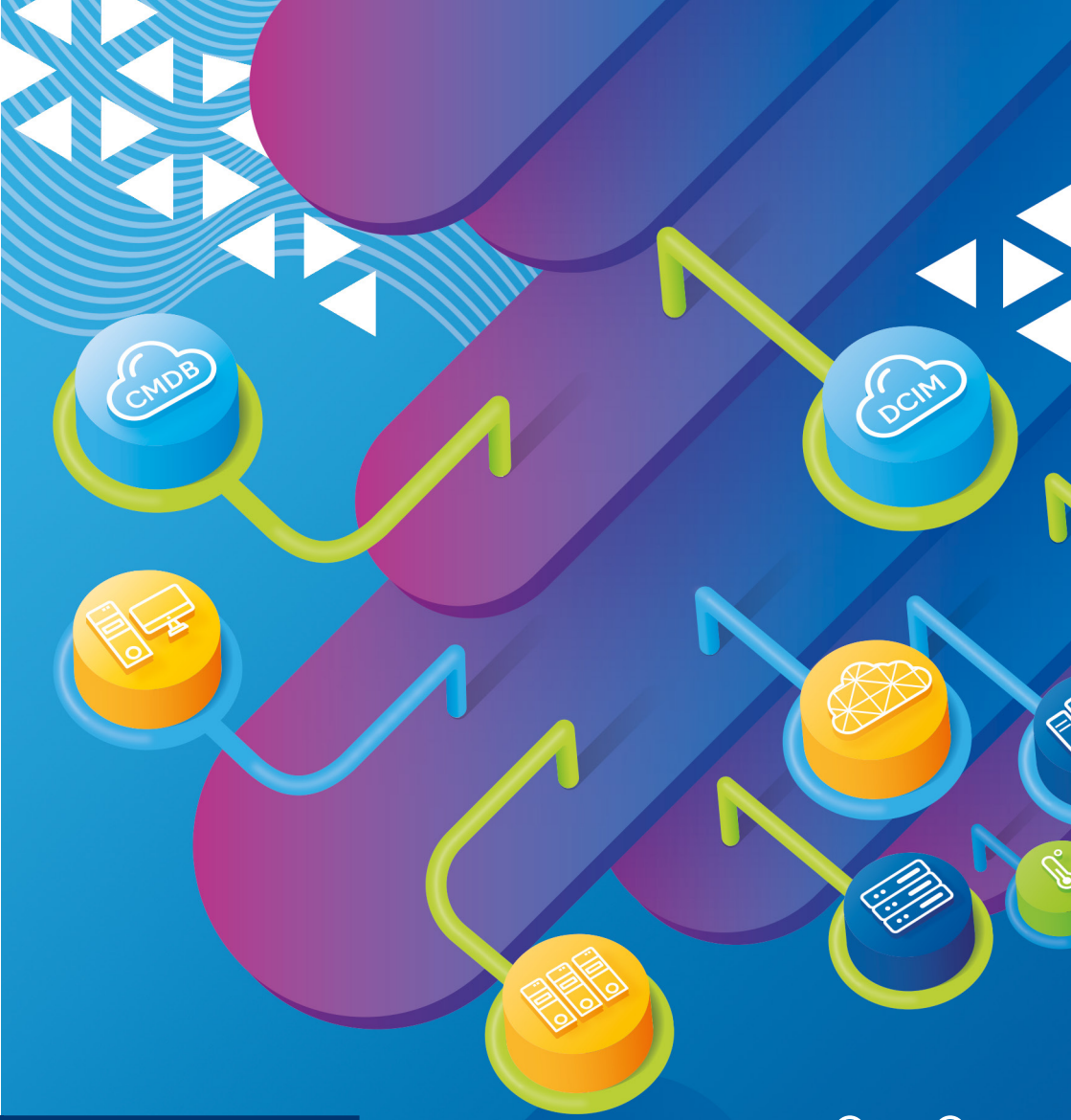
Created by RiT Tech, the tool represents the answer to the DCIM exam question. It is not an adjunct to building management, it is a must have in an industry that continues to migrate towards distributed digital infrastructures and hybrid environments.

An holistic solution that bridges gaps between systems and environments, XpedITe brings the ability to orchestrate operations across all sites and assets in any given network. It fully integrates IT with facilities and streamlines the sharing of information and processes.

Pioneering automation, the innovative capability eases the burden on those responsible for operating digital services. An all-seeing eye, XpedITe enables points of failure and breaches of physical security to be immediately detected and uses advanced algorithms to problem-solve and plan.

Automated work orders mean tasks that historically took days can be completed in minutes and any network changes can be executed with confidence having first been forensically analysed through XpedITe.

RiT Tech's managed service is ready to challenge perceptions and, with XpedITe, Data Centre Infrastructure Management are no longer dirty words.



DITCH THE INFERIOR

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Green Building & Energy Efficiency

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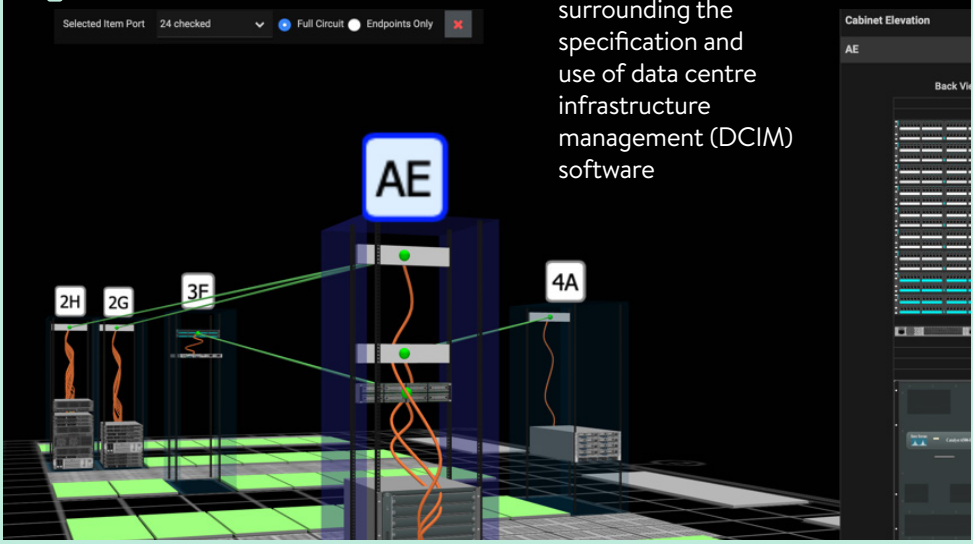
BRINGS ENERGY TO LIFE

Knowledge is power

Herman Chan of Sunbird Software answers some of the common questions surrounding the specification and use of data centre infrastructure management (DCIM) software



Traditionally, DCIM software has been focused around simplifying data centre asset and space capacity management. While point tools like Excel spreadsheets and Visio diagrams were difficult to use, hard to maintain and error prone, data centre managers found success in leveraging DCIM software to maintain an accurate inventory of data centre assets in real-time, while boosting space capacity utilisation and reducing stranded capacity.

TRACK AND TRACE

As modern data centres have grown increasingly complex and higher in density, another use case is driving more and more data centre managers to deploy DCIM software – the need to track and manage port capacity and cabling. With an overwhelming number of IT assets and connections to manage, data centre managers need a tool that enables them to easily and accurately inventory and track individual physical port types residing on every device. This enables them to make the most informed decisions to improve planning for new equipment and services, plus aid infrastructure maintenance and troubleshooting.

Why is tracking port capacity and cabling so important? Consider the physical data centre infrastructure requirements of just one IT device when a decision is made to add new equipment. That single device – beyond needing space and power – spawns the need for a multitude of power and

'Today's second generation DCIM tools offer a comprehensive data centre management solution focused entirely on solving real-world customer problems, inclusive of the need to track and manage port capacity and cabling.'

network ports and associated cables.

Now consider this very simple example across a data centre with 100 racks. Managing the roughly 3,000 servers in those racks is already enough to make a data centre manager's head spin, but there is also a complex system of 6,000 power supplies, 6,000 power cords, 7,200 rack PDU power ports, 10,000 in-rack patch ports, 10,000 far-end patch ports, 10,000 Ethernet ports, and 20,000 patch cords. To effectively manage those 100 cabinets, you actually have to manage over 70,000 individual components when you factor in all the ports and cables. And the complexity only increases with every additional data centre site that needs to be managed.

HELPING HAND

With such a complex physical infrastructure to manage, how are data centre managers expected to accurately track the usage, availability, capacity, cable routes and connectivity of every asset and every hop in the data centre? Fortunately, with a modern DCIM solution, you can easily answer questions that would have been nearly impossible to answer otherwise, such as:

If I need to perform maintenance on a UPS, what devices will be impacted and how do I notify the device owners?

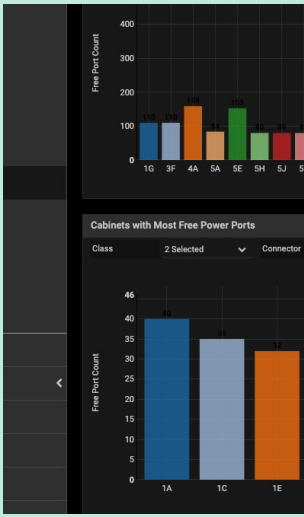
With DCIM software you can conduct impact analysis from any point in a data circuit or power circuit and easily see exactly which devices will be affected by maintenance. With a single click, you can send device owners an email notification regarding the status of their equipment.

If I need to replace a network line card, what devices are connected to it and will be impacted?

DCIM lets you visualise all the physical connections between ports in your data centre on your floor map in 2D, 3D or tabular formats, so you know exactly what is connected to what and how it will be impacted. Circuit trace wiring diagrams display each hop in a power circuit or data circuit from origin to termination with the details of each connection point, so you can identify single points of failure and decrease troubleshooting time.

If I need to install four new 2U servers requiring eight contiguous rack units of cabinet space, 1,600W, eight C13 power ports and 16 RJ-45 data ports, and the servers need to go to a far-end main distribution frame (MDF) cabinet, how do I know which cabinet can meet my requirements?

DCIM software



with intelligent capacity search allows you to easily set multiple requirements to find the ideal place to deploy new equipment. Simply select the device you are installing, or enter your space, power, and port capacity requirements, and within seconds the tool will provide you with the optimal cabinet to deploy your equipment.

What is the real-time available port and space capacity in all my cabinets across all my data centres?

DCIM software provides easy to understand 2D and 3D CAD-like floor map visualisations to correlate real-time data across the most common capacity restraints, such as port and space capacity, to clearly illustrate available capacity with red, yellow and green colour coding.

How can I plan, reserve, create work orders and update my resource inventory accurately and automatically?

DCIM software enables you to generate change requests, automate device moves and maintain a complete audit trail of requests and work orders for compliance.

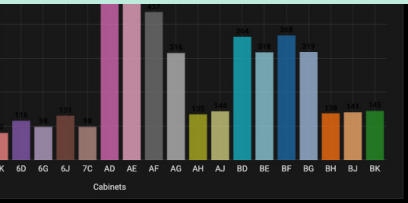
DCIM software saves time and simplifies data sharing by eliminating manual data entry. Out of the box configuration management database (CMDB) connectors enable automatic sharing of data across disparate databases throughout the enterprise, enabling a single source of truth for all inventory and asset items.

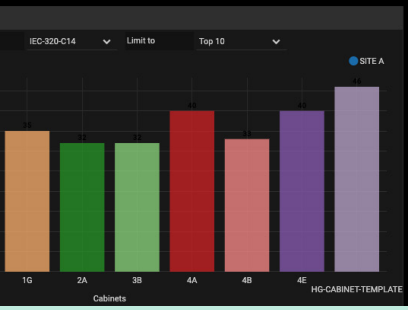
How do I track parts like transceivers, hard drives and cards?

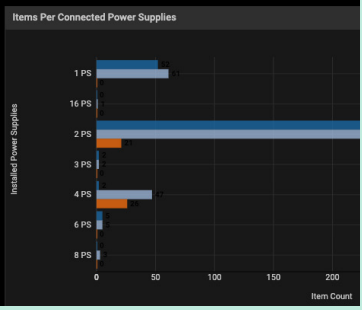
DCIM software with a parts management feature allows you to track the various subcomponents of your devices such as transceivers, power supplies, memory modules, network interface cards and cassettes to ensure that you don't run out of spares.

How do I document a cabling installation?

DCIM software makes it easy to document structured and patch cabling installations by capturing cabling component information with any moves, adds or changes. Visual diagrams can be easily created to show which ports are in use on a device and which are available and remotely viewed without the need to make a trip to the data centre.

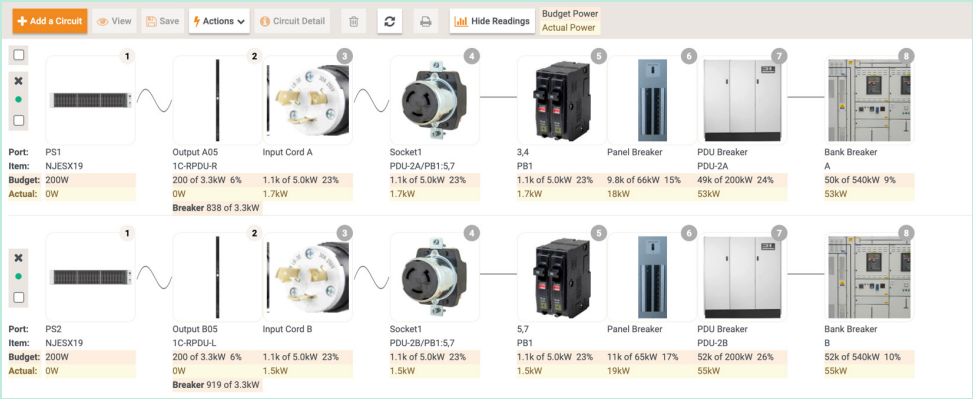






How do I know my connections are compatible?

A modern DCIM tool will automatically validate the compatibility of your connections with a built-in rules based engine that won't let you make connections without



making sure that they will work. When looking for optimal locations to deploy new equipment, the software will not include cabinets without enough available and compatible ports.

How do I identify trends and simplify how I provision new equipment?

DCIM software with business intelligence dashboards and visual analytics lets you leverage reports to keep track of your data centre connectivity capacity in ways Excel and Visio can never provide. Get zero configuration dashboard widgets with key performance indicators (KPIs) like number of data and power circuits added over time, data and power port capacity trends and cabinets with free ports, to get actionable insights at your fingertips.

TOOL OF THE TRADE

Some DCIM software is just a tool for asset management with eye-pleasing 3D visuals, but the fact is that today's second generation DCIM tools offer a comprehensive data centre management solution focused entirely on solving real-world customer problems, inclusive of the need to track and manage port capacity and cabling. A complete DCIM solution will look beyond just the servers in the cabinet and allow you to track detailed information on ports, cables, connectivity and relationship mapping to support agile remote management of everything in the white space. ■

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.

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Cable Management Warehouse (CMW)

When you have made the investment in new technology to construct a data centre, and the associated cabling to get it up and running, why would you risk using plastic cable ties that can cause damage and be easily overtightened?

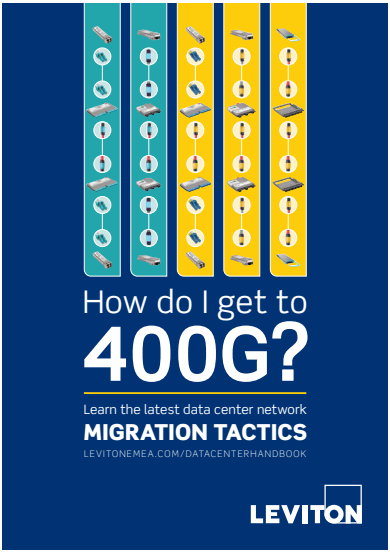
BradyGrip Print-on Hook Material is a one of a kind labelling solution, which allows you to easily identify cabling. Developed through a partnership between Brady and Velcro Companies, labels can be quickly printed and positioned.

Available in various widths with a grippy backing, **BradyGrip** is easy to reposition or remove. There's no need for you to guess a cable bundle's identity or have trouble locating it, and **BradyGrip** eliminates the need for any costly rework. The result is a saving in both an engineer's time and project budget.

For a limited period CMW is offering a free Brady BMP21 printer and three **BradyGrip** cartridges when you purchase Velcro One-Wrap (terms and conditions apply).

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

Leviton



Every data centre – from small enterprise to cloud hyperscale – has a unique set of network priorities. However, all data centre managers are looking for cabling systems that can weather multiple generations of technology upgrades with minimal disruption.

The new Data Center Network Interactive Handbook from Leviton is loaded with tips and tactics for deploying, managing and upgrading a data centre network.

The guide takes a comprehensive look at the data centre Ethernet physical layer and offers helpful recommendations – covering typical cable architectures and topologies, fibre modes and connector types, installation and termination, as well as polarity recommendations and network migration strategies for 100Gb/s, 200Gb/s and 400Gb/s.

To download your free 60 page interactive guide

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WHY CHOOSE XPEDITE?

XpedITe™

Because RiT Tech's managed service is ready to challenge perceptions and re-define what users should demand from their Data Centre Infrastructure Management system.

Much more than a beefed up building management tool or overpriced asset register, XpedITe provides a single source of truth in real-time and monitors activity while focusing on the management, connectivity and automation of every element of a data centre's ecosystem.

The innovative capability eases the burden on those responsible for operating digital services by orchestrating operations across all sites and assets in any given network.

XpedITe's pioneering automation enables tasks that historically took days to be completed in mere minutes, safeguards against any unnecessary downtime and delivers measurable cost and time efficiencies.

XpedITe is not a "nice to have" but a "MUST" in an industry that continues to migrate towards distributed digital infrastructures and hybrid environments.

Make the most of it

Michael Akinla of Panduit explains how to get the best out of data centre infrastructure management (DCIM) cooling control

The coronavirus lockdown and subsequent shift to a less travel orientated working environment has heightened the need for network automation. Data centres have reduced on-site staff and customer team visits to lessen the opportunity for human contact, so DCIM and remote access is necessary to maintain, and even improve, the management of critical systems.

PLAN OF ACTION

The ability to collect actionable data, analyse and predict outcomes within the technology space provides one of the biggest opportunities to eliminate energy wastage, reduce CO2 emissions and lower the risk of downtime. Data's strategic importance to organisations has placed new pressures on technology networks to work to their optimum performance levels.

Data centre equipment moves and device additions alter the balance of power, cooling, space and connectivity, and this has consequences on the effective capabilities of the technical space. Without understanding the possible outcomes of change, it is difficult to manage the evolving environment of the data centre on an ongoing basis, resulting in increased risk.

DCIM systems have improved considerably and now provide the information to not only keep track of physical and environmental changes, but also to generate live models of the data centre to deliver maximum value. It offers users advantages including real-time actionable information about assets, power usage, cooling, connectivity, rack security, cabling, bandwidth and power delivery.

INFORMATION CENTRE

Although DCIM systems vary widely and are available as modular software applications or as appliances, they collect standardised information from connected

infrastructure resources. Most now utilise a graphical user interface (GUI) and present a comprehensive range of information to administrators and support teams in easily consumable formats. These include floor layouts, 3D cabinet images and precise equipment indicators, so that errors or problems are identified and found easily and quickly. This reduces the risk of the wrong server, power supply or other system being disconnected in error.

Information is a crucial element to enable effective design, installation and update of network infrastructure. DCIM solutions should be paired with intelligent hardware so that the data centre infrastructure can be monitored and controlled to deliver optimal performance. The interaction between a DCIM solution and a thermal management system, in particular, can lower energy use and reduce CO2 emissions. These tools now offer complete visibility into a data centre's infrastructure state of play at any time and from anywhere. They can highlight changes, instigate predetermined responses and alerts, and indicate human intervention to change physical configurations.

COMMAND AND CONTROL

Different equipment will have different thermal characteristics. It is important that a thermal management system and corresponding DCIM solution recognise those characteristics. However, it is the wider monitoring of the interaction of equipment like servers, intelligent PDUs (iPDUs), IP switches and electrical power management systems that is now so useful to technology space users. By using detailed information, data centre administrators and customers can optimise equipment and in-cabinet ducting, blanking panels, shades and cool boots to direct airflow effectively to increase energy efficiency.

Another example is the ability of a DCIM solution to track connectivity ports and recognise whether they are in use – helping to increase data centre flexibility and expandability. Knowledge of port location and availability enables customers and administrators to efficiently deploy assets such as servers and storage devices.

Remotely monitoring power and environment sensors across multiple cabinets throughout the technology space provides the platform for efficiency. Managing data from multiple technology spaces or sites allows a single tech space dashboard to display real-time environment situations, track trends, events and alerts. This now provides a highly granular cabinet level set of metrics that, when viewed more widely, can signal changes that lead to alerts. DCIM in conjunction with iPDUs facilitates connection to individual servers and systems, allowing devices to be controlled and switched on and off or power cycle through them without human intervention in the cabinet.

LEVEL BEST

Many DCIM systems rely on a wide range of actionable information, starting with the most basic up to highly detailed data that enables a high degree of control. A process we use with all clients and has provided excellent results is The Maturity

Model, which allows users to understand their infrastructure and how to manage it. Our Maturity Model consists of three defined levels:

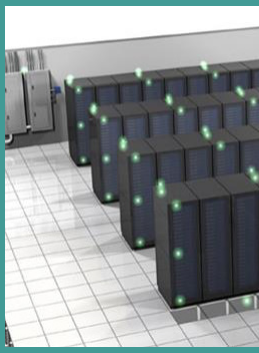
• Maturity Level 1
Basic information about the amount of resources you have available, such as the amount of cooling capacity you have and how much you're using. With basic information, you are able to set alarm thresholds and alert notifications to reduce the risk of unplanned downtime.

'The ability to collect actionable data, analyse and predict outcomes within the technology space provides one of the biggest opportunities to eliminate energy wastage, reduce CO2 emissions and lower the risk of downtime.'

• Maturity Level 2
More detailed information, in context. For example, you are able to monitor power loads to quickly find underutilised rack power and determine the optimal placement of equipment. At this level, you utilise live colour imaging depicting data points such as temperature, humidity and sub-floor pressure, overlaid on a floorplan. This enables users to spot problems quickly.

Monitoring provides you with the information needed to adjust and react to utilisation trends, as well as to plan for the future. For example, poor placement of blanking panels may create hotspots. If you are able to monitor conditions, you will be able to take steps to avoid failure due to overheating before thresholds are passed. You may also compare the performance of your own technology in the data centre against ASHRAE guidelines.

• Maturity Level 3
Still more detailed information, with a focus on enabling immediate action, often with the aid of automation. You are able to see the location of each piece of equipment on the plan, and to see specific information about different vendors' kit. You are also able to closely monitor and automatically control infrastructure components to enable the highest level of efficiency.



STRATEGIC DIRECTION

Data centres are strategic to most organisations operating connected technology. These requirements are expanding business processes, whilst also placing unprecedented demands on data centre capabilities. To maintain effectiveness, every internal change must be met with corresponding changes to the four significant capacity management resources to ensure a high level of performance and uptime:

• Cooling
Stranded cooling capacity leads

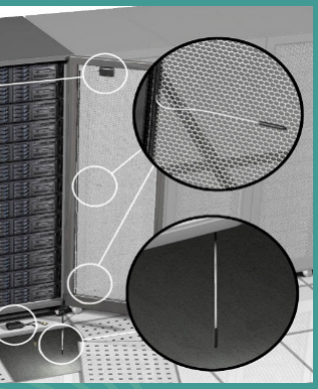
to hotspots and thermally induced downtime. Overcooling, intended to ensure equipment safety, is expensive and wasteful.

• Power

Underutilised power/stranded power capacity is due to lack of consumption visibility. Without visibility, it is difficult to provide accurate evidence of carbon footprint and energy consumption for precise planning and green credentials.

• Space

Inefficient utilisation and even asset loss due to poor asset tracking can slow deployment and hamper the effective utilisation of rack space.



• Connectivity

Lack of connectivity tracking can affect equipment deployment. Disconnections and unauthorised changes cause risk to operations.

ENERGY FLASH

A DCIM system that provides the information you need and allows you to do more with your existing data centre capacity is essential. Knowing your maturity level allows appropriate technology installation and actions to be taken to maximise your data centre's performance and avoid unnecessary costs and downtime. Intelligent hardware that can provide the DCIM with comprehensive real-time information and that can respond to the controls that the DCIM system recommends is essential. Energy is a data centre's largest expenditure, so understanding your infrastructure and how to maintain it effectively will optimise its use. ■

MICHAEL AKINLA

Michael Akinla leads sales in the UK and Ireland for Panduit's network infrastructure products. He has 20 years' experience in the deployment of Panduit's most complex solutions, working closely with a number of large global accounts to bring about significant improvements in terms of higher bandwidth deployments, reduced Power Usage Effectiveness (PUE) and lower total cost of ownership (TCO).

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Carbon Pricing and Why Companies Should Pay Attention is a blog by Steven Carlini of **Schneider Electric.**
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Iceotope, Schneider Electric and Avnet have joined forces for a new webinar. Simplifying the Edge answers key questions concerning effective expansion at the edge.
To access the webinar **CLICK HERE.**

The Global mobile Suppliers Association (GSA) has published its latest 5G Ecosystem Report.
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Cybersecurity: Building Business Resilience is a report by **Robert Walters and Vacancysoft.**
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Cable Fire Behaviour: An Overview and Considerations is a blog from Hermann Christen of **R&M.**
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Cradlepoint's annual State of Wireless WAN report outlines the results of a recent IDG survey of 499 IT decision makers in the US, Canada, and the UK on attitudes, approaches and strategies in the area of wireless infrastructure.
CLICK HERE to download a copy.

Getting the green light

Alexandra Nacken of Nexans examines how green network infrastructures can help meet future demands in a responsible way

According to the European Commission (EC), the information and communications technology (ICT) industry generates up to two per cent of all global CO2 emissions. A recent study published in Science states that data centres accounted around for around one per cent (205TWh) of global electricity consumption in 2018. Several new developments that will result in increased usage of devices and networks, such as 5G, Wi-Fi 6 and the internet of things (IoT), are going to drive these numbers up even higher.

USER FRIENDLY

According to IDC research, some 212 billion IoT enabled devices may be connected to the internet soon, while Cisco predicts that by 2021 there will be 4.6 billion internet users worldwide and 271 billion connected devices. These IoT, Wi-Fi 6 and 5G devices demand continuous power and create vast volumes of data that need to be stored, transported and analysed.

As the number of devices, users, applications and networks grows, so will the global carbon footprint. The challenge lies in meeting the fast growing demand

for capacity and performance, keeping costs at a reasonable level and, at the same time, actively reducing environmental impact. Ericsson claims the ICT sector's carbon footprint could be reduced by over 80 per cent through exclusively using renewable energy sources. Fortunately, ICT and optical fibre based networks can help reduce energy usage in several ways.

WAYS AND MEANS

A study carried out by the Global Enabling Sustainability Initiative and Deloitte shows that ICT can help solve a wide variety of sustainability challenges and help address climate change in particular. Remote working solutions that reduce travel, for example, or the integration of monitoring and learning capabilities into in devices, can play a significant role.

By creating smart buildings and cities with sensors and actuators means that lighting and heating aren't used when not required. Big data, artificial intelligence (AI) and intelligent devices and systems play an important part in reducing energy consumption. There is also a great deal to be gained by simply reducing the amount of power consumed by the devices, cabling and networks that provide the backbone for the digital economy. Furthermore, making sure systems can remain operational for as long as possible also lowers the environmental burden.

PERFECTLY POSSIBLE

It's also possible to significantly reduce the energy consumption of network infrastructures themselves. Various elements contribute to the energy consumption of network switches such as bandwidth, link load and traffic distribution

insights. Green networking refers to the optimisation of networking to be more energy efficient. Key technologies are software defined network (SDN) and network function virtualisation (NFV). Virtualisation can help reduce power consumption and support load balancing, which increases equipment utilisation.

Recently, researchers at Sweden's Chalmers University of Technology completed a research project looking at how to make fibre optic communications systems more energy efficient. Proposals included smart, error-correcting data chip circuits, which can be used in optical systems to compensate for noise and interference, and which consume 90 per cent less energy than comparable systems.

'By reducing the power used at network level by intelligently balancing platforms and technologies, a significant contribution can be made to making ICT more sustainable without sacrificing quality and efficiency.'

TAKING OFFICE

A fibre to the office (FTTO) network can reduce energy consumption by as much as 70 per cent. In FTTO networks, less power is used for technical cooling and, in some cases, the energy required by cooling is halved. In traditional network designs, floor distribution devices may consume a great deal of power and require efficient cooling to dissipate heat.

FTTO requires significantly less cabling, consumes less energy and needs less cooling. FTTO switches also support the IEEE 802.3az Energy Efficient Ethernet (EEE) standard, which allows each port on the switch to power down into a standby mode

when no connected devices are active. EEE ports consume power only when data is transferred. In a traditional copper based Ethernet network with 2,000 ports, the annual electricity consumption is estimated to exceed 500,000kWh/a. However, with an FTTO architecture, the same number of ports consume 350,000kWh/a – a saving of 76t of CO2.

COMMAND AND CONTROL

Further energy savings can be realised by modelling and controlling fibre optic communications at the network level. Control of data traffic allows resources to be utilised optimally. Efficiency can be optimised by scheduling port and wireless access, constantly adjusting power usage or devices shutting down automatically when not in use. All of this requires the monitoring and management capabilities of tools such as data centre infrastructure management (DCIM) and automated infrastructure management (AIM)

A fast, low latency and responsive FTTO network with power over Ethernet (PoE) capacity also supports the introduction of smart building management systems, helping reduce energy consumption by optimising lighting, air conditioning and heating usage. Short copper cable pathways for PoE minimise the power loss on the cable and, as a result, energy costs can be cut by up to 70 per cent. As the level of power transported via PoE increases and more and more IoT devices are added, the savings will add up.

SUSTAINABLE GROWTH

Of course, basic infrastructure best practices such as ensuring connected ports and devices aren't unused and provided with proper voltage with PoE, removing the need for adaptors for every device and correct cable management are also essential. As worldwide ICT infrastructure grows and the power consumed increases, green networking solutions are crucial to sustainable growth. By reducing the power used at network level by intelligently balancing platforms and technologies, a significant contribution can be made to making ICT more sustainable without sacrificing quality and efficiency. What's more, total cost of ownership can be reduced by 40 per cent and installation time by 60 per cent. ■

ALEXANDRA NACKEN

Alexandra Nacken is head of marketing EMEA - data network solutions at Nexans. She studied business administration at RWTH Aachen University in Germany with a major in technology and innovation management and marketing. When not creating campaigns for customers or planning the next big event, you will find her travelling – enjoying the energy and cultural richness of Europe – or simply at home, taking long hikes with her parents' dogs.

Nexans

Nexans recently launched a seven port switch series as part of the LANactive GigaSwitch V5 product family designed for fibre to the office (FTTO) topologies.

This FTTO switch has four user ports and three uplink ports in different combinations. This allows, for example, the redundant connection of the switches using fibre cables and the simultaneous delivery of power over Ethernet (PoE) to end devices with RJ-45 copper uplinks. One of the special versions has a PoE+ power source equipment (PSE) uplink as well as a PoE+ powered device (PD) uplink that allows remote powering. The switch is equipped with a rotatable head by default.

An FTTO switch consumes minimum power for data transmission. It supports Energy Efficient Ethernet – IEEE 802.3az – so that energy is only consumed when data is transferred.

To find out more about the seven port switch series **CLICK HERE.**
www.nexans.co.uk/lansystems

Austin Hughes

Austin Hughes' intelligent rack power distribution units (PDUs) allow remote access via network IP from anywhere – allowing you to stay in control without a physical on-site presence. It is possible to remotely manage the intelligent PDUs and associated sensors via InfraPower IPM-04 free software.

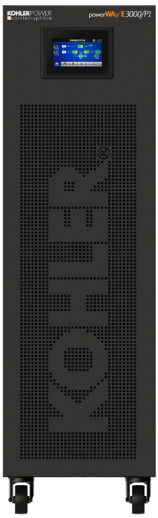
- Complete PDU monitoring, control and reporting functions
- Free graphical user interface (GUI) software
- Integration into third-party DCIM via SNMP
- An IP dongle that enables IP remote access to the PDUs by a single network IP

Employees with suitable access levels can obtain and use data from intelligent PDUs to improve energy efficiency within a data centre and make more informed decisions. Integrating environmental sensors with PDUs allows parameters to be set to monitor temperature/humidity fluctuations, as well as power.

InfraPower rack PDUs can be integrated with InfraSolution networked smart card access control for added cabinet security and InfraGuard for full cabinet environmental monitoring and management.

To find out more **CLICK HERE.**
www.austin-hughes.eu

Kohler Uninterruptible Power (KUP)



Kohler Uninterruptible Power (KUP) has launched its new PowerWAVE 3000/P1 – the most energy efficient uninterruptible power supply (UPS) unit in its class.

The PowerWAVE 3000/P1 solves the problem of providing economical to run and dependable critical power protection for higher load single-phase applications such as vital servers, networks and telecommunications. Compact in size and easy to install and operate, this advanced new 10kVA or 20kVA double conversion model lowers energy costs and carbon emissions, whilst providing a stable and resilient supply of power.

Behind its class leading efficiency of 96.6 per cent lies intelligent design, optimised airflow and highly efficient components. With up to four units able to be connected in parallel for larger loads, dry contact cards, network interface SNMP cards and responsive sensors allow close monitoring for maximum confidence and peace of mind. Other key features of this new unit include a bright 4.3-inch graphical touch screen display, providing quick access to an intuitive system menu and a maintenance bypass switch connection.

To find out more **CLICK HERE.**
www.kohler-ups.co.uk

Taking the initiative

Stu Redshaw of EkkoSense looks at how green networks can be extended to the edge

Whether it's building a circular economy or working to extend green networks, there's no doubt that sustainability is now a key concern for organisations of all sizes. That's particularly the case across Europe, where the data centre sector is being asked by the European Union (EU) to set the standard by becoming carbon neutral by 2030.

EFFICIENCY DRIVE

If you just listened to digital giants such as Google or Facebook, you might think that this is a challenge that's already well on its way to being achieved. Google, for example, talks about how its data centres are now twice as energy efficient as an average enterprise facility – delivering around seven times as much computing power as five years ago, all while drawing the same amount of electrical power. Securing a Power Usage Effectiveness (PUE) rating of 1.1 across its global data centre estate would certainly suggest that Google's hyperscale approach is working.

Larger data centre operators clearly have access to the kind of economies of scale that allow them to follow the latest best practices and secure energy efficiencies across their data centre estates. Applying energy efficiency upgrades, sourcing renewable energy, adopting free air cooling or investing in heat capture to reuse excess heat all combine to not only support an impressive green network approach, but also help to set an industry standard.

Of course, when it comes to building and running green data centre networks, the very largest organisations can afford such a relentless focus on eliminating waste across their operations. From designing artificial intelligence (AI) enabled processors and using machine learning (ML) to automatically optimise cooling, Google pursues every opportunity to improve its performance – and it's also the world's largest corporate purchaser of renewable energy.

STAND AND DELIVER

In considering the sustainability of green data centre networks it's critical that organisations look at the impact of the entire network. Google delivers an impressive PUE performance in its data centres, but where does that data go and how is it being used? Hyperscale operators can't just draw a green line where their physical operations end – they also need to consider the impact of their data further down the chain.

Similarly, as a data centre operator I can sign up to my local green energy provider, but does this really mean anything? My business could be relying on green energy but using it in an inefficient manner. Again, it's not just about buying the power, it's about conserving that energy and managing it efficiently. And while that may be relatively easier to achieve at a hyperscale level, that's no excuse for not optimising data centre performance right across the IT infrastructure.

MODEL BEHAVIOUR

Gartner suggests that today's hybrid IT environments, with organisations managing workloads in data centres in the public cloud and at the edge, reflect a move towards a world where IT is sited wherever the business needs it. It goes on to suggest that by 2022 over half of enterprise data will be created and processed outside the data centre or the cloud – that's up from under 10 per cent in 2019. This is a major shift and a real challenge for those organisations that have relied on hyperscale to underpin their green data centre network commitments.

By moving processing closer to the edge users can benefit from reduced latency and improved speed. However, it's the reduction of network traffic going back and forwards to the cloud that's the real prize. Streaming sites such as Netflix, Amazon Prime, Spotify and Apple Music transfer huge volumes of video and audio data. Couple this with massive growth in the volume of data now being generated by users, devices and internet of things (IoT) sensors, and it's easy to see why the edge is increasingly seen as the template for how data can be stored and consumed outside of the traditional data centre.

SIZE MATTERS

With infrastructure getting stretched out in this way, edge micro environments

become increasingly difficult to manage and optimise. Edge sites can also vary dramatically in size – an edge site for a streaming giant such as Netflix could be additional data centres at a metro rather than a regional level, while for others it might just be a small data room in a branch facility, or even just a data or communications cabinet that's remotely located and hardly ever visited.

Collectively, the volume of edge sites is already significant and their spread is likely to increase with a continued transition of data from hyperscale environments to micro facilities. And while more local access to data is clearly important from a data handling perspective it does present issues, as edge sites are notably more difficult to manage and optimise as they're small, dispersed and potentially unstaffed.

BIG ISSUE

While data centre operators can deliver unprecedented efficiency and environmental performance levels at hyperscale level, the reality is that most data centres still face considerable operational challenges. We estimate that some 15 per cent of racks still fall outside of ASHRAE guidelines for inlet temperatures, while excessive cooling still accounts for around 35 per cent of an average data centre's overall energy consumption. Unfortunately, this can still lead to significant thermal issues, and it's proving a barrier to the kind of carbon reduction initiatives that are so critical to end-to-end green network performance.

That's why it's so important for organisations to maintain focus on optimising the performance of power and cooling across their networks – especially the harder to reach edge elements where continuous optimisation has always proved so challenging. Just because a site might be difficult to access or manage doesn't mean the same optimisation rules shouldn't apply – keeping risks to a minimum, making systems robust and being careful about how much cooling is deployed.

> 'With edge now representing a larger and larger proportion of IT infrastructure activity, it's time for organisations to focus on extending their efficiency and sustainability focus to all the branches of their green networks.'

TWIN PEAKS

The key here is to bring a mix of technologies to bear – from software as a service (SaaS) systems and scalable cloud infrastructure to new low cost sensor technologies and IoT enabled comms – to enable the gathering of cooling, power and space data at a granular level. That way we can create true 3D visualised real-time digital twins of data centre estates.

Now we are even working to build out digital twins still further with IoT connectivity for remote infrastructure assets such as renewables and power and telecom assets. Major network operators often have tens of thousands of these assets – utility pylons, electricity substations and mobile phone masts – all of which are linked to the network, and where even the most marginal performance improvement gains can deliver impressive results across the estate.

ESSENTIAL SELECTION

So for true green network optimisation it's essential that organisations don't just cherry-pick the more accessible hyperscale opportunities. With edge now representing a larger and larger proportion of IT infrastructure activity, it's time for organisations to focus on extending their efficiency and sustainability focus to all branches of their green networks – no matter how small. ■

STU REDSHAW

Stu Redshaw is chief technology officer at EkkoSense. He holds a doctorate in heat transfer and thermodynamics from Nottingham University and specialises in revolutionary clean tech and energy efficient systems. In addressing today's data centre thermal challenges, his goal has always been to look at technical problems from first principles and challenge the status quo.

Aruba and Lenovo transform Ducati Motors' IT infrastructure and provide business continuity

Aruba Enterprise and Lenovo have collaborated to transform Ducati Motors' IT infrastructure by tapping into the cloud and creating a hybrid approach.

Aruba Enterprise proposed a project that encompassed completely different hardware and configuration settings to Ducati's previous infrastructure. The approach enabled a new data centre concept that involved renewing Ducati's on-premise data centre hardware in the form of a service in private cloud mode. At the same time, Lenovo worked with Ducati to design and implement an upgrade of its high performance computing cluster, based on Lenovo ThinkSystem SD530, SR630 and SR650 servers.

The design of the infrastructure has allowed Ducati to transform from a desk-centric company into a mobile first company in a few days, while maintaining efficient operations and performance. One of the main advantages of the new solution is having a customised infrastructure ready for extension and upscaling.

SSE Enterprise Telecoms' 100Gb/s capable network extended with new and upgraded data centres

Whether it's for customer orders, billing systems or managing IT infrastructure, processing information is critical for the smooth running of any business. And that requirement is prompted by emerging technologies such as 5G and the internet of things (IoT).

In recognition of this, SSE Enterprise Telecoms has connected eight new data centres in England, Scotland and Wales including ASK4 in Sheffield, AQL DC2 and DC5 in Leeds, SCC and Six Degrees in Birmingham, DataVita and Pulsant in Glasgow and Next Generation Data in Newport. The business has also upgraded Global Switch 2, Interxion Hanbury Street in London, LD5 in Slough and Kilburn House in Manchester to facilitate 100Gb/s and 10 Gigabit Ethernet services as standard.

This means that the company is now connected to more than 90 commercial data centres across the UK and forms part of its overall investment programme to deliver high capacity connectivity across England, Scotland and Wales to support the ever-increasing capacity demands.

Equinix ML5 data centre awarded TIA-942 Rated 4 design certification by EPI

Equinix has achieved the ANSI/TIA-942 Rated 4 design certification from EPI for the first phase of its Milan flagship International Business Exchange (IBX) data centre. EPI is the only certification body to have received the Conformity Assessment Body (CAB) accreditation from the Telecommunications Industry Association (TIA) and has performed TIA-942 audits for mission critical data centres all over the world.

Known as ML5, the site is due to open in Q1 2021 and will offer state-of-the-art colocation, as well as a host of advanced interconnection services including Equinix Cloud Exchange Fabric (ECX Fabric) and Equinix Internet Exchange. Equinix is the first company in Italy to achieve the Rating 4 design level.

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

PROJECTS & CONTRACTS IN BRIEF

Colt Data Centre Services' (DCS) hyperscale data centre in West Frankfurt has secured customer commitments for 25.2MW of IT power, bringing the site to full capacity. This pre-letting comes 16 months prior to operational commencement of the facility.

ECI, now part of Ribbon Communications, has been selected by DB Systel, the digital partner to Deutsche Bahn, to build and deploy a state-of-the-art, flexible optical fibre backbone network.

CityFibre has been awarded a multimillion pound contract by Three to connect an additional 1,300 key mobile masts across 59 towns and cities.

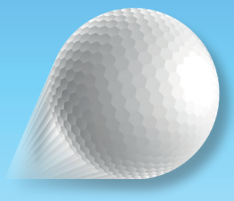
KT Corporation has deployed the Infinera 7300 Series Multi-haul Transport Platform in its South Korea backbone network to support a nationwide rollout of 5G services.

Nokia is set to support Telefónica in its efforts to deploy 5G services to 75 per cent of the Spanish population by the end of the year. The move means that Nokia will continue its long-standing partnership with Telefónica as the only vendor to supply 5G radio technology to all of its 5G operations across Europe.

Telent has been awarded a contract by Openreach to support a £12bn project to bring ultrafast full fibre broadband to millions of homes and businesses throughout the UK.

neutrality.one has selected datamena to deploy a point of presence (PoP) in its Dubai facility.

Game on!



Despite the Inside_Networks 2020 Charity Golf Day being cancelled, some regular attendees decided to make the most of a sunny late summer day and stage a mini-competition at the prestigious Hanbury Manor PGA Championship Course

It's been a tough year in many ways and hosting charitable events has been almost impossible due to coronavirus and the need for social distancing. The Inside_Networks 2020 Charity Golf Day was originally set to take place in May but was subsequently rescheduled to September. Unfortunately, with infection rates rising in the UK, Hanbury Manor was unable to host the event within government guidelines, so it was effectively cancelled.

However, with golf in four balls still permitted, 15 teams and 60 network infrastructure industry professionals met for a 'golf only, socially distanced' day in the Hertfordshire sunshine. The course was in immaculate condition, having recentlyhosted a European Tour event and the weather was scorching – nudging 30°C on the day.

Team Fluke Networks, captained by Rob Jewell, won on the day with an impressive 96 points and it was nice to see a regular attendee be a first time winner! Team LMG 1 came in second with 89 points, with Team Webro Cables & Connectors third with 88 points.

Best individual score was Jeff Goodge of Team Fluke Networks with 42 points, narrowly beating Tommy Tanner of Team LMG 1 on countback. Nearest the Pin on the 4th was only about three feet from the hole and was won by Lawrence Stone of Team Mayflex. Longest Drive was won by Jason Spurr of LMG 2 and he was just about on the front fringe of the 18th green – spectacular hitting, but he was playing off a handicap of 1!

Everyone was able to enjoy a few well deserved post golf beers on the upstairs patio at Hanbury Manor, while respecting social distancing rules. Well done everyone for making the effort to attend.

Plans are already underway for the Inside_Networks 2021 Charity Golf Day next May. Places are sure to be snapped up quickly, so those interested in taking part are advised to register early.

To enter a team or get more information about the various sponsorship opportunities that are available CLICK HERE to email Mark Cumberworth of Slice Golf and Events or call 07769 696976.

Team CNet 2 display their sartorial elegance

Team Curran IT 2 take a break

Lawrence Stone (l) of Team Mayflex receives his trophy from Andrew Stevens (r)

Team iDAC Solutions get ready for action

This year's winners – Team Fluke Networks

Ideal Networks

Ideal Networks has released a free software update for its LanTEK IV cable certifier that introduces a new set-up option. It enables field technicians to perform ad-hoc testing without setting up a project with preconfigured test IDs, making it a good option for small projects or maintenance work. This user friendly feature is also well suited to testing non-sequential IDs for one-off tests or moves, adds and changes based work.

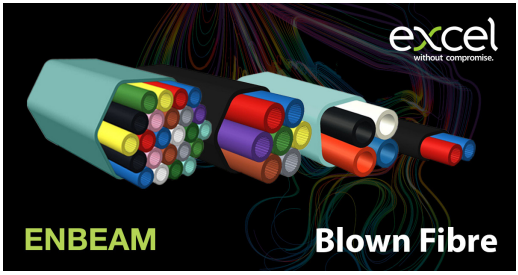
The latest software update also supports the requirements of a number of new international test standards. Notably, it will support upcoming changes to the TIA-568 standard to include DC resistance unbalance (DCRU), due later in 2020 as part of a move to ensure that all newly installed Category 5e, and better, cabling can support high power power over Ethernet (PoE).

LanTEK IV users will now be able to access calibration certificates with data at no extra cost. What's more, the calibration certificates are stored on-board as PDF files, allowing users to copy them to a USB drive if provided hard copies are lost.

To download the new software update **CLICK HERE.**
www.idealnetworks.net

Excel Networking Solutions

Excel Networking Solutions has launched its Enbeam blown fibre solution. The system includes a range of microducts suitable for internal or external applications, complemented with Enhanced Fibre Performance Units (EPFU) of 4-fibre through to 12-fibre in both singlemode and multimode.



The internal Enbeam microducts have the distinctive Excel ice blue jacket colour, whilst the external ducts have a black high-density polyethylene outer sheath with aluminium foil inserted between the jacket and microducts to provide moisture protection. Each design has internal longitudinal ribbing and a permanent super-slick lining of Silicore to reduce friction during cable placement.

As bandwidth demand continues to grow, Mayflex is experiencing increased demand across its Enbeam fibre offering, so the introduction of the blown fibre solution could not come at a better time. Enbeam blown fibre solution systems installed by authorised Excel partners will be able to include this new system within the standard Excel 25-year warranty programme.

For further details call the Excel sales team on 0121 3267557 or **CLICK HERE** to visit the Excel website.
www.excel-networking.com

ShanCo IT Services

ShanCo IT Services is a professional services company specialising in:

- Voice and data structured cabling
- Fibre optic cabling
- Electrical cabling
- CCTV, security and access control services
- Data centre installations
- Public address and audiovisual systems
- Wi-Fi solutions
- Rack and stack
- Helping hands
- Hardware and product supply
- Deployment services
- Cisco TelePresence
- Site surveys
- Network audits

To watch the new ShanCo IT Services video **CLICK HERE.**

Alternatively, call our friendly team on 0800 8654471 to talk about your infrastructure needs and projects, **CLICK HERE** to visit our website, or to send an email **CLICK HERE.**

shancoitservices.com

EPI

EPI has developed a new accredited training and certification – the Certified Network Cabling Design Professional (CNCDP). A comprehensive yet compact two day course, the CNCDP will allow anyone involved in physical network design to properly plan, design and oversee installation and testing to ensure a network meets stated requirements. The CNCDP will assist in raising standards in network infrastructure deployment globally.

The CNCDP contains eight chapters and includes key subjects such as technical standards, design of different cabling sub-systems, calculation for bill of materials, architecture, installation, testing and acceptance. Those who have gone through the training and passed the exam will be able to review the proposed designs by vendors and ask them challenging questions to ensure the cabling infrastructure is meeting the business objectives in the most cost efficient way, without sacrificing flexibility.

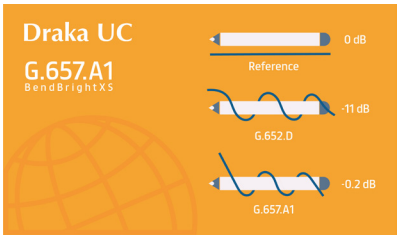
Participants who pass the accredited exam will receive the globally recognised CNCDP certification, validating their knowledge on network cabling design and implementation.

For more information about the CNCDP **CLICK HERE** or to send an email **CLICK HERE.**

www.epi-ap.com

Draka/Prysmian

Draka has upgraded its Universal Cabling Fibre offering from 'regular' G.652.D optical fibre to a profile meeting all requirements of G.657.AI too. Bend insensitive fibre cables are a crucial part of the shift towards flexible and ultra-reliable connectivity, and this upgrade allows Draka to continue to make cables in ever increasing fibre counts – 432 fibre Cca is now available – with reduced diameters.



As demand for information continues to increase, fibre networks are becoming more dynamic, crowded and limited for space. All of this sees fibre bends becoming more likely to occur. Preventing power leakage due to bending effects is therefore a crucial component of high-performing optical networks.

A bend insensitive G.657.A1 fibre loses only 0.2dB when twisted twice around a pencil, whereas a 'regular' fibre loses up to 11dB. On the other hand, this upgraded singlemode fibre comes with a standard step index profile not assisted by additional structures in the cladding. This ensures full compatibility in any existing network application and peace of mind for operators.

To visit the website and find out more about Draka's Universal Cabling System **CLICK HERE.**

mms.drakauk.com

Yokogawa

Yokogawa has unveiled its AQ1210D dual purpose optical time domain reflectometer (OTDR) for both singlemode and multimode fibre networks. The new device meets the demands of small and medium sized contractors tasked with the installation and maintenance of short distance networks within and between buildings.

Yokogawa's latest OTDR is the first in its portfolio of multi-field testers to offer four wavelengths of 1310/1550nm (singlemode) and 850/1300nm (multimode). Like other devices in the series, the AQ1210D is a smart, full-featured OTDR that offers complete testing capabilities in a compact and light package.

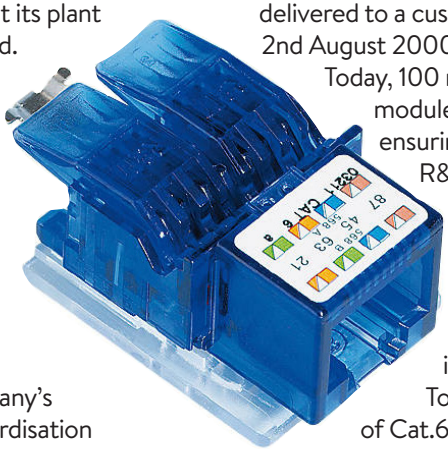
The new model has been developed to offer performance that is suited to both singlemode and multimode fibre. By way of example, the singlemode dynamic range of 37/35dB is optimal for interbuilding and short-distance networks found in fibre to the building (FTTB), point-to-point optical link and data centre interconnect (DCI) applications. In addition, the multimode dynamic range of 25/27dB will prove ideal for intrabuilding networks to suit LAN, private, enterprise, campus and data centre deployments.

For further information **CLICK HERE.**

tmi.yokogawa.com

R&M

As a Cat.6 pioneer, over the last 20 years R&M has produced more than 100 million modules of this type at its plant in Bubikon, Switzerland. Here, each individual module is fully automatically tested for return loss, crosstalk, continuity and high voltage resistance, and the error rate has been below 1ppm over 20 years.



Thanks to the company's involvement in standardisation committees, R&M is informed about forthcoming technologies at an early stage. The first 1,000 Cat.6 modules were delivered to a customer in Winterthur on 2nd August 2000.

Today, 100 million R&M Cat.6 modules are installed worldwide, ensuring fast data transmission. R&M has used this experience to develop subsequent module generations – the latest module, Cat.8.1, is successfully establishing itself on the market.

To read R&M's Twenty Years of Cat.6 blog **CLICK HERE.**

rdm.com

HellermannTyton

The time has come for HellermannTyton to say goodbye to our Category 5e system. The use of Category 5e has been declining globally for a number of years and, with this in mind, we no longer see it as part of our connectivity solutions future.

We have been taking huge strides to become a world leader in future connectivity. In order to continue bringing you the best and latest networking infrastructure solutions, HellermannTyton will be withdrawing our entire Category 5e product offering.

23rd December 2020 is the final date that we will accept any orders for Category 5e products. After this, manufacture of Category 5e products will cease and products will become obsolete.

Thank you Category 5e – You have served us well!

CLICK HERE to read more about this announcement and if you have any further questions please contact us.

www.htdata.co.uk

All you need to know

CLICK ON THE COVER TO VIEW THE 2021 MEDIA KIT

Band on the run

Alan Stewart-Brown of Opengear explains how to make software defined wide area networks (SD-WAN) resilient with smart out-of-band (OOB) technology

The SD-WAN market has long been projected for strong growth. In July 2019, IDC announced that according to its SD-WAN Infrastructure Forecast this segment of the enterprise networking market will grow at a 30.8 per cent compound annual growth rate (CAGR) from 2018-2023 to reach $5.25bn. These forecasts were pre-coronavirus pandemic of course, but SD-WAN has rapidly established itself as the standard approach in enterprise deployments over recent years, especially as deployments have moved to the edge. There is no reason to suggest that will change after the virus has abated.

EFFICIENCY DRIVE

SD-WAN can be deployed as a software based solution or as a software and hardware combination, with branch sites hosting WAN devices. SD-WAN vendors that offer software plus hardware solutions replace traditional branch routers with appliances that automatically figure out the most efficient network paths and shift traffic to optimise bandwidth.

These devices are centrally managed with routing that can be updated in real-time in response to changing network requirements. The technology that comprises SD-WANs has been around for a long time. What is new

is an SD-WAN's ability to dynamically share network bandwidth across connections. An SD-WAN network can manage a wide range of different network connection types, from broadband to long-term evolution (LTE) and multiprotocol label switching (MPLS) links.

This means that traffic can be routed over the most cost effective services, such as broadband, while services that need higher quality, such as video and voice or high security with sensitive information, can still be routed over remaining MPLS lines, although many enterprises are freeing themselves of MPLS completely. This flexibility is key in enabling SD-WANs to enable a smarter and more agile network, and significantly reduce both the cost and complexity of traditional WANs.

POINTS OF VULNERABILITY

Not only does SD-WAN offer huge savings in cost, it can also provide time and resource savings with cloud based provisioning. While cloud based provisioning makes the provisioning and configuration of an SD-WAN router straightforward, it is also limited through in-band management. If an internet link goes down, you are out of luck. That, coupled with the very sophistication of SD-WAN networks, creates some vulnerabilities, which can lead to small network events becoming large scale

disruptions.

In traditional branch networking, branch routers often go for years without needing any intervention like configuration changes or firmware updates. But SD-WAN routers run a larger software stack. Maintenance and firmware upgrades are common, which means that there are many more opportunities for things to go wrong. Every time a firmware update is executed, there is a risk of an error or misconfiguration that can bring down the router. These complex routers require more frequent updates than the legacy equipment, increasing the risk of an outage. Whether introducing new features or fixing bugs, outages have the potential to become catastrophic without the right kind of solution being in place.

PROTECT AND SURVIVE

SD-WAN's basic security offerings aren't sufficient to protect an enterprise. Not only does the primary SD-WAN connection need to be secure, it must also be integrated into any other security solution that has been deployed. Yet, in a SD-WAN network, for example, it is difficult for engineers using traditional network management tools to find unauthorised IoT devices.

Added to this, the fact that SD-WAN doesn't provide the visibility that organisations need to ensure these IT applications work as required, makes it equally difficult to monitor or troubleshoot sites and underlay networks. SD-WAN devices are often fully meshed, which means that just one device can give attackers visibility into the traffic flow from across the enterprise.

Although SD-WAN brings with it a new flexibility for edge computing, the routers introduce single points of failure that can result in potential network downtime. A single event can cause failures in multiple circuits. In short, SD-WAN brings many benefits but it also poses challenges to traditional network management, which expects constant connectivity. All this can equate to more possibilities of downtime, which can quickly spell disaster for a brand, revenues and an organisation's ability to provide services.

> 'The latest smart OOB management tools offer a positive way forward. They can provide an alternative path to devices located at remote sites when the primary internet link is disconnected, enabling engineers to identify and remediate issues and helping mitigate the risk that SD-WAN can bring.'

FINDING A SOLUTION

In this context, the latest smart OOB management tools offer a positive way forward. They can provide an alternative

path to devices located at remote sites when the primary internet link is disconnected – enabling engineers to identify and remediate issues and helping mitigate the risk that SD-WAN can bring. Moreover, using a separate management plane solution allows organisations to securely monitor and access all devices without impacting normal operations.

In effect, OOB provides secondary access to the network in the event of a disruption. Separate to the production network, administrators are able to remotely monitor, manage and access all devices so disturbances don't affect the primary operation. In addition to providing access when an issue arises, smart OOB also enables organisations to improve day-to-day operations, and proactive monitoring enables staff to pre-emptively recognise and remediate issues to reduce the need for truck rolls.

FIT TO SCALE

Designed to provide resilience at the core and edge of the network, smart OOB is scalable, providing the ability to manage infrastructure at distributed sites. Troubleshooting and remediation at a network edge enables organisations to detect faults before they become failures, which minimises downtime and operating costs. Complementary failover to cellular capability provides enough bandwidth to ensure mission critical applications can be run as issues are remediated, helping to ensure always on access even during an outage.

This combination of smart OOB and failover to cellular enables users to protect their deployments through:

- Automated alerts to instantly identify network issues
- Environmental sensors for temperature, humidity, vibration and door openings
- The capability to operate independently from the in-band network

CUTTING EDGE

This resilient back-up connectivity allows enterprises to reduce the time consuming nature of dispatching engineers to remote sites to make configuration changes and troubleshoot issues for business continuity. Smart OOB and failover to cellular ensures that SD-WAN continues to operate when all other circuits are unavailable, providing the always on access needed at the edge. ■

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Alan Stewart-Brown is Opengear's vice president EMEA with responsibility for overseeing all sales, channel development and marketing events across the region. He has 25 years of sales leadership experience gained across the technology sector including wireless LAN, enterprise software and ecommerce. Before joining Opengear Stewart-Brown held senior pan-European sales management positions at Xirrus, Fiserv, AIM Technology, eColor and Phoenix Technologies.