

THE NETWORK INFRASTRUCTURE E-M

Inside_Networks

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WHY HAS THE ADOPT
COOLING BEEN

Call of duty

HOW SMART BUILDING
ACCESS CONTROL PROTECTS
PEOPLE AND PLACES

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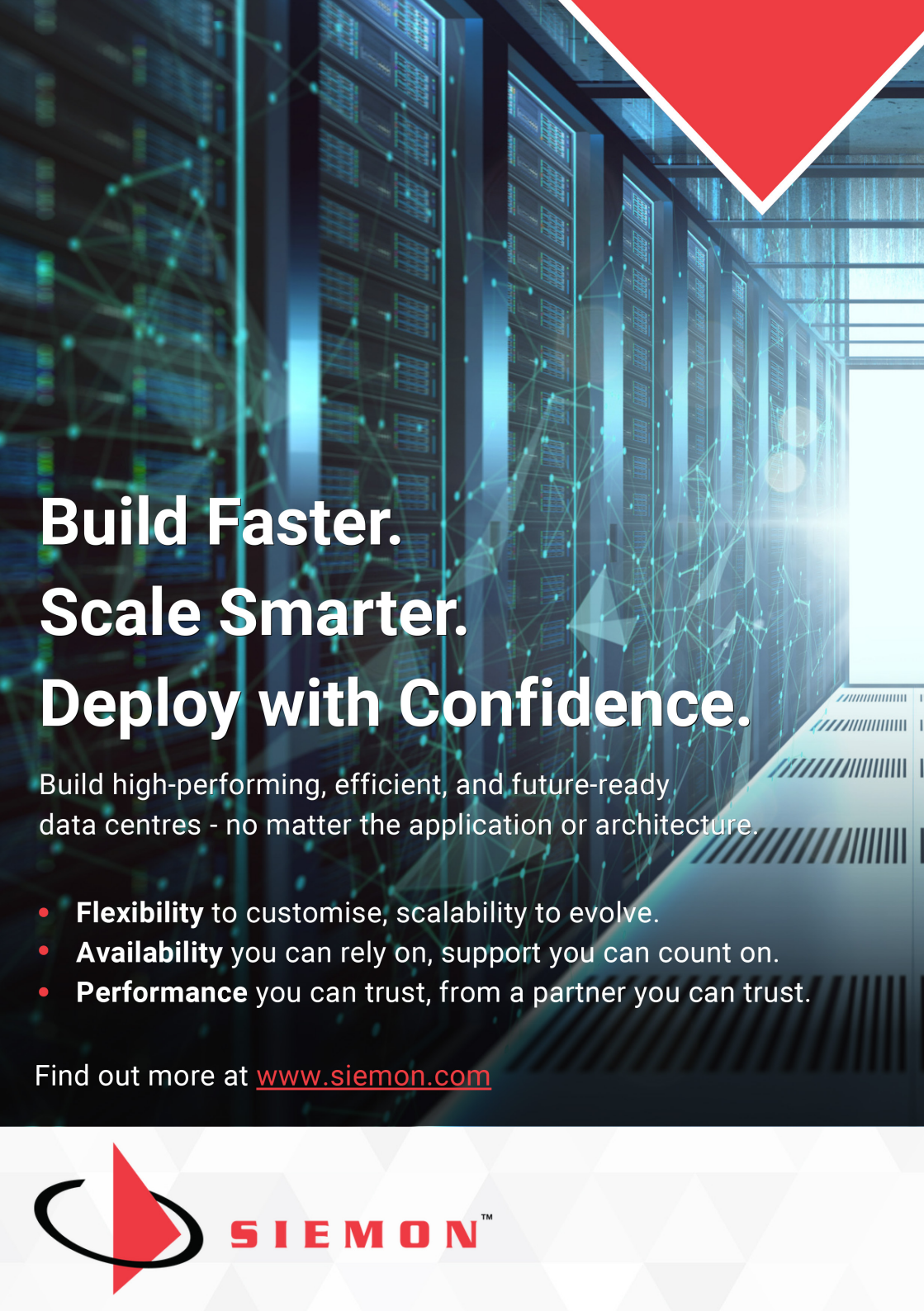
Hot to handle

ADoption OF LIQUID
COOLING SO SLOW?



Close to the mark

WHY EDGE DATA CENTRES
ARE BRINGING AI NEARER TO
WHERE IT IS NEEDED

A server room with blue lighting and a network overlay. The background shows rows of server racks with glowing blue lights. A network overlay of green lines and dots is visible. A large red triangle is in the top right corner.

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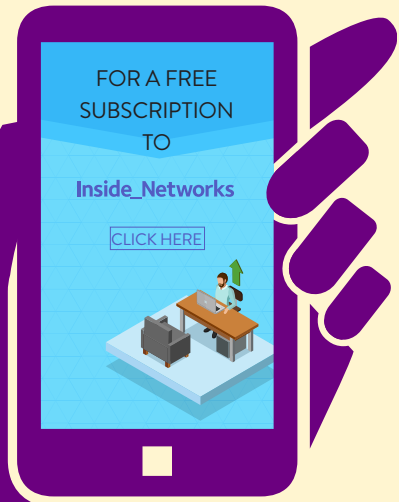
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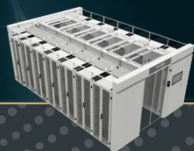
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What appears to be a persuasive argument on paper does not always translate into enthusiastic adoption. A clear example of this is liquid cooling, which has seen slow take-up in data centres despite its clear advantages in terms of thermal efficiency and energy savings.

Air cooling remains the dominant method due to its lower upfront costs, ease of implementation and long established infrastructure. However, the high levels of heat generated by artificial intelligence (AI) and high performance computing means that air cooling alone is increasingly insufficient.

Given that the direction of travel is clear, data centre operators still appear hesitant to shift to liquid cooling. In this issue's Question Time we've asked a specially selected panel of industry experts to offer their views on the subject and suggest what can be done to drive up adoption of this innovative technology.

As digital transformation continues apace there is increasing need for compute power at the edge. It continues to be a massive industry talking point and with applications for AI at the edge growing, Steven Carlini of Schneider Electric examines how existing expertise and capability in the industry can overcome the challenges it presents. Steven is joined by Chris Wellfair of Secure IT Environments (SITE), who offers some tips on choosing and deploying micro data centres.

We also have a special feature dedicated to enterprise and data centre security and access control, comprising two excellent articles. In the first, Mark Green of LMG looks at how smart building access control technology now protects people as well as places. In the second, Paul Richardson of Stellium Datacenters explains why achieving the right blend of physical, technical and human security is the only way to provide a consistently safe and controlled data centre environment.

It's been great fun putting together a review of the Inside_Networks 2025 Charity Golf Day, which raised £10,000 for Macmillan Cancer Support. I'd like to once again say a massive thank you to all those who participated, sponsored and provided raffle prizes.

I hope you enjoy this issue of Inside_Networks and if you'd like to comment on any of these subjects, or anything else, I'd be delighted to hear from you.

Rob Shepherd

Editor





Read our latest white paper:

Understanding Mode Field Diameter (MFD) in Hyperscale and AI Data Centers

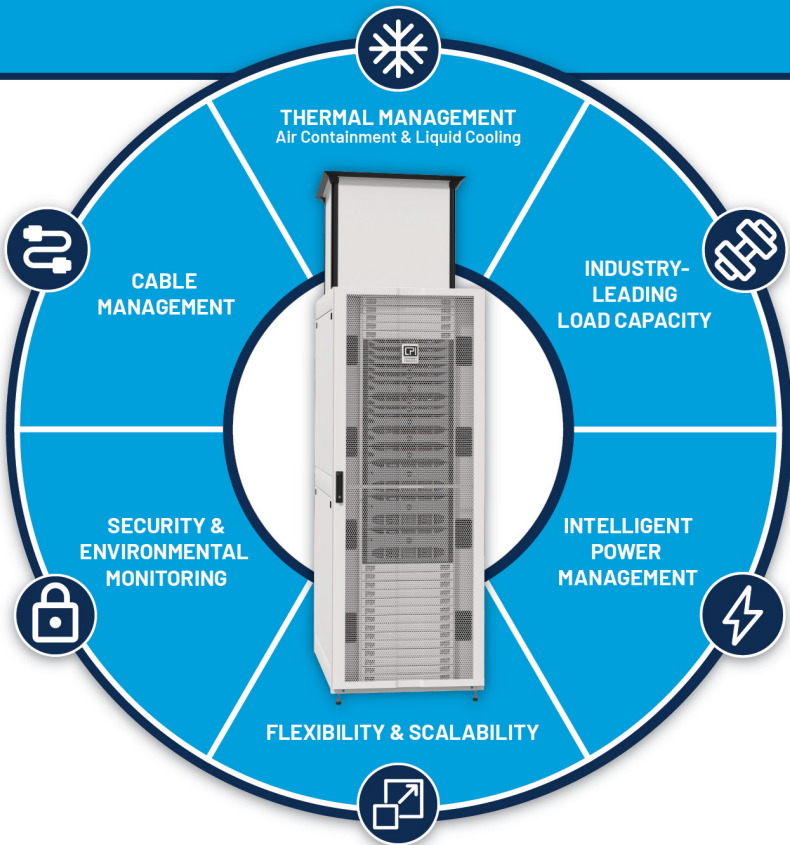
Explore MFD, a crucial yet often overlooked fiber characteristic influencing installation, performance, and testing methodologies. Gain essential insights into key concepts, including MFD mismatch, accurate measurement of fiber channel loss, and MFD in fiber standards.

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GBI and Compass Datacenters launch Green Globes Data Center Campus Certification for sustainable digital infrastructure

The Green Building Initiative (GBI) has partnered with Compass Datacenters to develop the Green Globes Data Center Campus Certification. It provides data centre owners and operators with a streamlined, efficient and cost effective way to assess and certify the sustainability of multiple buildings on a site.

As demand for energy intensive digital infrastructure continues to grow, the new Green Globes Data Center Campus Certification supports mission critical facilities working to reduce environmental impact and achieve long-term resilience. It recognises the

interconnected nature of data centre campus operations and makes it possible

to evaluate redundant infrastructure and systems to improve efficiency and sustainability.

‘Digital infrastructure is the backbone of today’s society, and it’s critical that we design, construct and operate these spaces with sustainability at the forefront,’ said Vicki Worden, CEO at GBI.

‘Green Globes Data Center Campus Certification empowers operators to optimise environmental performance across entire campuses while meeting evolving stakeholder expectations and regulatory requirements.’



Vicki Worden

Kao Data campaign highlights women driving innovation in digital infrastructure

Kao Data has launched Critical Careers: Celebrating Women in Digital Infrastructure – a campaign that highlights the diverse stories, careers and contributions

of women across the digital infrastructure sector. As the data centre industry continues to underpin the global digital economy, a

new book celebrates the women who are driving innovation, resilience and growth.

With the sector evolving at unprecedented speed to support artificial intelligence (AI), cloud and enterprise innovation, the project brings together

honest, insightful interviews with women from all backgrounds, geographies, ages and disciplines. From engineering to real estate, from marketing to human

resources, the women featured in Critical Careers represent many roles and life experiences.

Kalay Moody, chief people officer at Kao Data, said, ‘We wanted to take an in-depth look at the countless, impactful contributions

women from all disciplines and at all stages of their careers are making to the industry. What we discovered is that no two stories are the same, but together they reflect the importance of diverse experiences in driving progress and innovation.’



97 per cent of mid-market organisations intend to migrate applications or workloads from the public cloud

Research commissioned by Node4 has revealed that 97 per cent of mid-market companies plan to migrate some workloads out of their public cloud environments over the next 12 months. However, far from signalling the end of public cloud, this trend reflects a more targeted and pragmatic approach.

Organisations are optimising location and workload in environments that work best for their specific needs. In this context, it's notable that only five per cent intend to repatriate all their applications, while 49 per cent plan to



Richard Moseley

remove a few specific applications and workloads.

'Mid-market organisations are entering a new phase of cloud strategy – one defined by pragmatism, not dogma,' commented Richard Moseley, CEO at Node4. 'Most still have a substantial footprint of on-premises infrastructure and applications running in the public cloud. This demonstrates a clear preference for hybrid

environments and a shift from cloud first to cloud appropriate. We believe this will be the mid-market's default setting for the foreseeable future.'

Schneider Electric named Most Sustainable Corporation in Europe by Corporate Knights

Schneider Electric has been ranked the Most Sustainable Corporation in Europe by Corporate Knights.

This recognition places Schneider Electric at the top of the inaugural Europe 50 ranking, which evaluated over 600 publicly listed European companies across a comprehensive set of sustainability criteria. It follows the company's earlier distinction in January 2025 as the World's Most Sustainable Corporation, also awarded by Corporate Knights as part of its renowned Global 100.

'At Schneider Electric, sustainability is not just a priority – it is embedded in our



Esther Finidori

purpose and mission,' said Esther Finidori, chief sustainability officer at Schneider Electric. 'Being named the Most Sustainable Corporation in Europe is a powerful recognition of our efforts to drive positive impact through innovation, transparency and collaboration. We are proud to lead by example and remain

committed to accelerating our contribution to a more sustainable and inclusive world.'

Nutanix finds public sector embraces GenAI but faces security, skills and infrastructure gaps

Nutanix has found that 83 per cent of public sector organisations have a generative AI (GenAI) strategy in place, with 54 per cent actively implementing and 29 per cent preparing for implementation. However, as public sector organisations ramp up GenAI adoption, 76 per cent of IT decision makers say their current infrastructure needs moderate to significant improvement to support modern, cloud native applications at scale.

GenAI use cases across the public sector gravitate towards constituent/employee

support and experience solutions and content generation. However, 92 per cent of public sector leaders highlight the need for their organisations to do more to secure GenAI models and applications.

‘GenAI is transforming how we work,’ said Greg O’Connell, vice president federal sales public sector at Nutanix. ‘94 per cent of public sector organisations are already putting AI to work and expect returns in as little as one year. As

public sector leaders look to see outcomes, now is the time to invest in AI-ready infrastructure, data security, privacy and training to ensure long-term success.’



Legacy infrastructure is the biggest challenge for the net-zero energy sector

With the UK government’s aim to deliver zero carbon electricity by 2030, low carbon electricity infrastructure is key to cutting down the reported 29 per cent fossil fuel generation figure. However, despite bold policy commitments and investment in renewable energy, outdated systems across the grid are stifling progress.

Whilst the UK government has prioritised clean energy projects for grid connections, legacy processes and infrastructure are ultimately causing a backlog for projected

needs. More investment won’t solve this

issue – the sector must move outdated systems.

‘Without tackling the root causes of inefficiency, namely legacy IT and data systems, efforts to reach net-zero are likely to fall short,’ warned Pete Smyth, CEO at Leading Resolutions. ‘The energy sector’s dependence on old

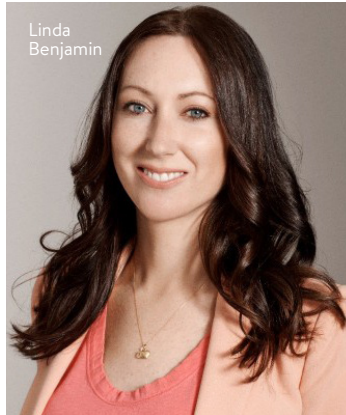
hardware and software means that even as new, renewable energy resources are introduced, integrating them into the grid is fraught with delays and complications.’



89 per cent of female leaders love tech but US and UK representation fails to match

Although 89 per cent of female tech leaders are thriving in their careers, opportunities are still limited, with women still making a tiny fraction of tech leadership – five per cent in the UK and 11 per cent in the US. This is according to research from AND Digital, which surveyed more than 500 senior women across both countries, revealing 45 per cent of US respondents and 40 per cent of UK respondents agree their greatest aspiration is to inspire other women in tech, far ahead of salary or promotion goals.

In the US, women aged 61 and over were the least likely to feel successful, supported or even enjoy their jobs. They were also the most likely to report gender discrimination



and distrust in internal reporting systems. This trend was not mirrored in the UK, indicating a troubling, age specific intersection of gender bias and invisibility in later career stages for US based women.

However, the US is leading in terms of the path into tech, with 42 per cent of female leaders having switched from another career in industries such as education, healthcare and retail. In the UK, only 28 per cent had made a similar switch.

Linda Benjamin, vice president at AND Digital, commented, 'Women in tech are energised, empowered and ready to lead. What's holding them back isn't ambition, it's outdated systems and narrow career pipelines and it's time to remove those barriers.'

NEWS IN BRIEF

After analysing the most recent research results from the AI and software cybersecurity market analysis report from the UK government website, OnSecurity found that just six per cent of software security companies are providing cybersecurity for AI systems.

After analysing over 750 current cybersecurity job listings, Bridewell found that the IT sector is the most opportunity rich with 209 active roles available, which accounts for 27 per cent of all cybersecurity job listings.

A fully funded initiative to accelerate digital and data skill development across local authorities has been launched. The Association of Directors of Environment, Economy, Planning & Transport (ADEPT) Digital Academy is a bespoke learning programme that is fully funded by the Apprenticeship Levy, combining hands-on, role relevant training with expert coaching and community learning.

The World Economic Forum's Future of Jobs Report highlights that 77 per cent of leaders believe there is a need for reskilling and upskilling existing workers to better work alongside AI.

Ready steady go!

Karl Bateson, UK key account manager at Centiel, explains how the company's artificial intelligence (AI) ready uninterruptible power supplies (UPS) offer the highest power density within the smallest footprint

 AI is one of the most exciting technological developments in history.

Machine learning offers the opportunity to attract significant gains in productivity within the workplace and, as a result, adoption has been rapid – and will continue to be.

AI promises further innovation in the future as much as it does improvements in operational practices within the day to day. Yet, behind the scenes, the impact of managing data and the sheer processing power needed by the transformation to an AI-driven world is already massive.

Widespread take-up and exponential growth mean AI will bring further challenges. According to GrandViewResearch, the global AI market is expected to reach \$1.81tn by 2030 – this means it will grow by over five times over the next few years.

Within AI-based data centres it can be necessary to support the power for 40-120KW per rack. 30-40kW per rack is 3-4 times more power than a typical 7-10kW IT rack and therefore power density within a UPS is key. In other words, UPS and associated equipment that is more powerful but has a much smaller footprint is required. The challenge has become focused on how to build systems that need

greater power while not expanding the space needed for the equipment to support it.

At Centiel we have developed ultra compact frames for our latest StratusPower UPS to be AI-ready and offer the highest power density within the smallest footprint. However, we have also considered the space that is required to operate and maintain the UPS. StratusPower only needs 900mm in front of the UPS to remove, maintain or replace the small 62.5kW modules.

StratusPower has the added benefit of a 30-year design life. Capacitors and fans only need to be replaced every 15 years instead of 4-5 years, which improves sustainability and lowers total cost of ownership.

Furthermore, StratusPower offers market leading nine nines (99.999999 per cent) availability to effectively eliminate system downtime, class leading 97.6 per cent on-line efficiency to minimise running costs, true hot swap modules to eliminate human error in operation, as well as long-life components to improve sustainability.

For more information about Centiel's AI-ready UPS **CLICK HERE**, or to send an email **CLICK HERE**.
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Navigating the shutdown of le

Hi Rob

Legacy data centres are closing their doors at a growing pace. They cost too much, run too hot and can't keep up with modern demands. In the UK, for instance, the Department for Environment, Food and Rural Affairs (Defra) shut one such facility in late 2024 and plans to phase out three more in 2025 as part of a £78m push to retire outdated tech and improve digital services.

Defra isn't alone and organisations everywhere are coming to the same conclusion – yesterday's infrastructure no longer fits today's world. That realisation creates pressure.

When a closure notice lands, firms often have to move their data in a hurry. It's a headache but it also puts the spotlight on data agility, which is the ability to grab, process and use data quickly and smoothly. In a landscape that can change overnight, agile data lets businesses pivot, innovate and stay future proof. It's no longer a nice to have – it's survival gear.

Most legacy sites were designed long before cloud native thinking, real-time analytics or today's environmental, social and governance (ESG) standards. Their siloed set-ups and patchy data quality slow decisions and inflate costs. Upfront hardware spending locks you into guesses about demand and scaling-up means waiting for boxes to arrive.

Security lags too. Cloud providers refresh their defences constantly, whereas on-premises teams struggle to keep pace. Add worries about data residency and rising energy bills, and the case for change writes itself.



More firms are racing to the cloud for obvious reasons including elastic capacity, granular cost control and built-in security. But you still need a plan. Start with a clear cloud strategy tied to business goals. Triage workloads by impact – move the critical stuff first and pick the right mix of public, private or multi-cloud. The latter is gaining favour because it avoids lock-in and lets you cherry-pick strengths.

Strong governance for security, compliance and data protection must run in parallel. And once you're up there, keep tuning performance and costs – the job isn't done the day you flick the switch.

Tech alone won't cut it. Upskill your teams or bring in partners and rethink

Legacy data centres with agility



workflows so they take advantage of cloud speed. Make portability a design rule, especially if you still rely on mainframes or common business oriented language (COBOL) apps. Executive backing is crucial – cloud programmes stall fast without a senior sponsor clearing roadblocks.

Banks feel this acutely. Many traditional institutions are still chained to mainframes, while cloud native challengers launch features in weeks. Moving core workloads to the cloud isn't just beneficial, it's table stakes.

A forced move can expose weak spots, especially in complex environments. Cloud migration touches everything including apps, data stores, ops models

and governance, so mis-timed steps invite overruns, downtime and budget blowouts. Treat the shift as a full scale business transformation, not a last minute fire drill.

When data is agile, decision making speeds up, operations flex and innovation flows. Modern cloud platforms make that possible. Romanian neobank Salt Bank shows the point – it launched in under a year and skipping traditional kit let the bank move fast and focus on customers.

To capture similar gains, firms need modern data platforms and a culture that treats data as a strategic asset. Real-time streaming should deliver insights when they matter, not days later. And because the market never sits still, reviewing both strategy and tech must be an ongoing habit, not a one-off project.

In short, data centre shutdowns are disruptive, but they're also a catalyst. Handle the shift well, and you'll come out faster, leaner and much more ready for whatever's next.

Dean Clark
GFT

Editor's comment

Some excellent advice from Dean and there's no doubt that shutting down legacy data centres demands a strategic approach that must be centred on data agility to ensure a smooth transition. Organisations must prioritise seamless data migration, leveraging cloud native solutions and real-time replication tools to minimise downtime and maintain continuity. If you fail to plan, you plan to fail.

Why we need to reduce

Hi Rob

Artificial intelligence (AI) is certainly the talk of the town. The UK government has developed a National AI Strategy and an AI Opportunities Action Plan to strengthen the nation's AI capabilities and encourage adoption across different industries.

However, there is a problem – the cost of the power needed to run AI-driven data centres in the UK is massive compared to overseas markets. As a result, the UK is missing out on opportunities.

If power costs circa 7p per kWh in some places in the Middle East compared to 20-25p per kWh in the UK, where will developers build their next data centre? It's a no-brainer. We are seeing a situation where potential investment and, along with it, jobs and industry that is valuable to our economy are being lost abroad instead of coming to the UK.

AI-driven data centres require so much

power. Previously, it would be common to quote and supply uninterruptible power supplies (UPS) to protect the power for 4-5 KW per rack. Now we are seeing up to 120kW per rack.

Larger UPS are needed – 1.2MW blocks



are now common and for an AI data centre we can be looking at 20MW, with up to 120MW of power protection as a minimum. Additionally, most AI data centres will

ce the cost of power

require new infrastructure, as it will be more expensive and technically challenging to convert and upgrade existing legacy sites than build new ones

I don't want to get into the realms of politics here but AI is a massive opportunity for the UK economy and we have the skills required to capitalise on this unique technological revolution. Therefore, focus needs to be directed at reducing the cost of power.

From a UPS point of view there is only so much we can do as a manufacturer and supplier. We have developed one of the most efficient UPS on the market, with a power density that is second to none. We've been able to bring down the total cost of ownership, including a reduction of maintenance costs, because its capacitors and fans only need replacing every 15 years rather than every 4-5 years.

But the cost of power issue still needs to be addressed more widely. Renewables will offer some hope but can they be reliable enough to support large scale projects such as AI-

driven data centres?

We are hearing lots of talk at AI conferences but when the rubber meets the road, where are all the real AI data

centres? They are not in the UK unless they are the ones funded by government sponsored research. Investors are going elsewhere and who can blame them?

According to the AI Opportunities Action Plan the government will set out a process to identify and select more of what it calls AI Growth Zones. It will also consider energy requirements, working with the National Energy System Operator (NESO). My question is whether this too little too late and have we missed the boat?

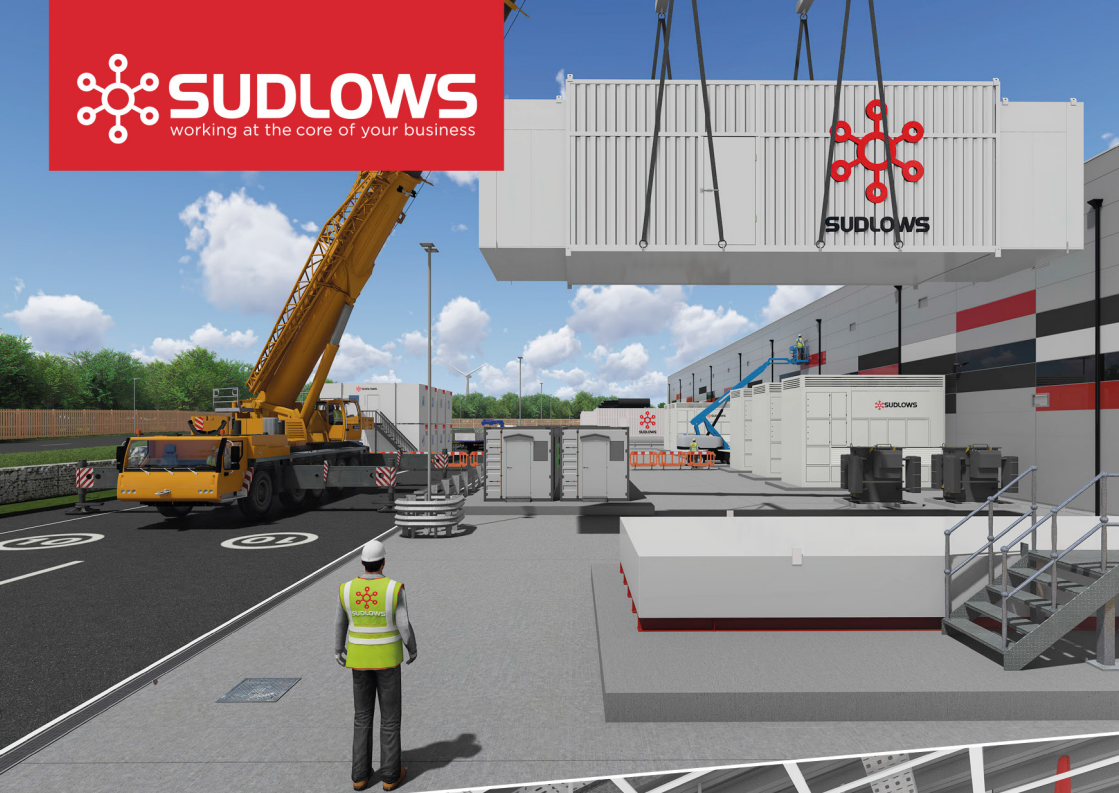
AI is a brave new world. It is evolving so rapidly and we don't know what the future will hold. What we do know is that AI requires huge amounts of processing power and data centres to store and manage data. AI offers as many challenges as it does opportunities but let's be in with a shout of helping to solve those challenges by encouraging AI infrastructure to be built in the UK rather than elsewhere. To do this the cost of power must come down.

Karl Bateson
Centiel

Editor's comment

The National AI Strategy aims to build an AI-enabled economy that promotes AI usage across all sectors, supporting digital transformation at local and national levels. This is a sensible and positive objective but, as Karl clearly points out, the data centres that are at the heart of the AI revolution must be affordable to operate. At the moment that doesn't seem to be the case and yet the cost of power in the UK isn't being discussed at the highest levels.





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Go with the flow?

Although liquid cooling is proven to be highly effective in tackling the thermal challenges associated with artificial intelligence (AI) workloads in data centres, take-up has been relatively slow. To examine the reasons why, [Inside_Networks](#) has brought together a panel of industry experts who also suggest what needs to change for it to become the norm

▶ Liquid cooling addresses the thermal challenges posed by AI workloads by significantly enhancing the efficiency and sustainability of data centres. Unlike traditional air cooling, which struggles with high density environments, liquid cooling delivers superior heat transfer by bringing the cooling medium directly to the components. This allows graphics processing units (GPUs), central processing units (CPUs) and servers to maintain optimal performance even under intense computational loads.

As a result, liquid cooling has been adopted by some forward thinking data

centre operators seeking to future proof their infrastructure. However, this group is firmly in the minority and the adoption of liquid cooling in data centres has been relatively slow.

What's to blame for this – is it the high upfront costs, the complexity of retrofitting existing infrastructure, concerns about potential leaks, maintenance challenges and/or a possible lack of in-house expertise? Inside_Networks has assembled a panel of experts to offer their views on the subject and suggest what can be done to drive up adoption of liquid cooling technology.

ALTHOUGH LIQUID COOLING IS PROMOTED AS A SILVER BULLET FOR MANAGING THE HUGE AMOUNTS OF HEAT GENERATED BY AI AND HIGH PERFORMANCE COMPUTING WORKLOADS IN DATA CENTRES, ADOPTION HAS BEEN SLUGGISH. WHAT ARE THE REASONS FOR THIS AND WHAT CAN BE DONE TO DRIVE UP ADOPTION OF THIS TECHNOLOGY?

STUART CRUMP

GLOBAL COMMERCIAL DIRECTOR AT LIQUIDSTACK

Liquid cooling is the nearest thing we have to a silver bullet for managing the immense heat loads generated by AI and high performance computing (HPC) in data centres. Compared to air cooling, it offers superior thermal performance, allowing higher rack densities and improved overall energy efficiency.

Right now, however, liquid cooling is largely limited to hyperscalers, HPC labs and a few cutting edge AI clusters. Perhaps this isn't surprising. Smaller data centre operators and enterprises are struggling to keep up with AI developments. The investment needed to adopt GPUs is frightening enough before you even consider the cost of upgrading or retrofitting cooling infrastructure.

Traditional data centre operators might be unfamiliar with the technology. Understandable risk aversion might be further fuelled by worries about downtime during installation or maintenance – this isn't helped by a lack of industry standards. AI is often a question of scale but it's hard to scale disparate, tricky to integrate infrastructure components, whether they're CPUs, GPUs or coolant distribution units (CDUs).

But as we move to next generation workloads air cooling just won't do. So how do we ensure liquid cooling trickles down to smaller players? The cooling industry can start by addressing tech leaders' and data centre operators' concerns directly.

We need education and training initiatives to build operators' trust in the engineers responsible for their cooling systems, particularly when it comes to maintenance and safety protocols. But we also need

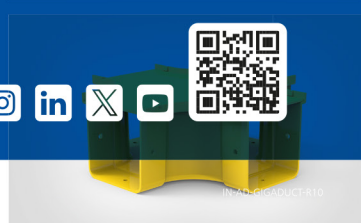
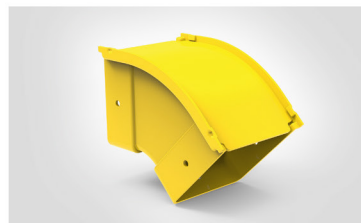
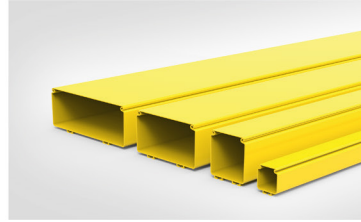
to prove to operators that liquid cooling delivers a clear return on investment (ROI) in terms of energy efficiency, performance and potential cost savings. This will be greatly helped if customers have access to turnkey, standardised liquid cooling designs that reduce complexity and integration headaches. And we need common frameworks

which show liquid cooling really is a scalable and reliable approach to modern data centre challenges.

All this could be accelerated if the biggest players – the hyperscalers, original equipment manufacturers (OEMs) and chip manufacturers – open-up on how they've developed and applied liquid cooling. After all, it's one thing to have a silver bullet. It's quite another to know how to target it at the heart of the problem.

'SO HOW DO WE ENSURE LIQUID COOLING TRICKLES DOWN TO SMALLER PLAYERS? THE COOLING INDUSTRY CAN START BY ADDRESSING TECH LEADERS' AND DATA CENTRE OPERATORS' CONCERNS DIRECTLY.'





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PAUL MELLON

OPERATIONS DIRECTOR AT STELLIUM DATACENTERS

It might appear the data centre community is dragging its heels in responding to implementing liquid cooling to support AI workloads, however, nothing could be further from the truth. It is a significant challenge requiring considerable investment.

Currently, only about seven per cent of the UK data centre community is utilising liquid cooling. These are mostly designed to accommodate racks operating at a power density up to 20kW. The chilled water produced to cool these racks generally operates at 18°C flow and 28°C return, employing computer room air conditioning (CRAC) units or fan walls to cool the rack using forced air.

The other 93 per cent are mostly cooled by indirect cooled air. This method has a rack cooling capacity of 20kW. This system does not use chilled water, but a combination of adiabatic and refrigerated cooling using compressors. It has proven itself to be very efficient delivering a PUE of 1.2.

To cool racks beyond 30kW capacity requires other means, as air just cannot move enough heat away from the IT surface by itself. Hence, chilled water in the form of rear door rack cooling all the way to direct to chip cooling is necessary. This is a significant engineering challenge – not technology, just pure logistics.

Existing data centres will struggle to embrace the fundamental changes

required to the building and site to support migration to HPC scalable deployment. The vast bulk of data centres in the UK are in business parks that can support power densities of 300W per m². HPC requires power densities of 3000-6000W per m². That level of power can only be accessed in industrial campuses.

The challenge facing the existing data centre community is not change but a metamorphosis. That said, the choice of technology is really important to ensure the investment has longevity. This brings in the question of immersion cooling or

direct to chip cooling. That discussion is for another day.

However, the fundamental of location is paramount in terms of available power to support HPC at scale. The current timescales to scale power from, say, 10MW to 50MW is several years. It might prove more practical to relocate the data centre to areas where power at scale is available.



'IT MIGHT APPEAR THE DATA CENTRE COMMUNITY IS DRAGGING ITS HEELS IN RESPONDING TO IMPLEMENTING LIQUID COOLING TO SUPPORT AI WORKLOADS, HOWEVER, NOTHING COULD BE FURTHER FROM THE TRUTH.'

MARK YEELES

VICE PRESIDENT SECURE POWER DIVISION AT SCHNEIDER ELECTRIC UK&I

Despite a surge in demand being driven by AI advancements, and with rapidly evolving GPU technologies pushing performance boundaries, liquid cooling systems have long been a staple in HPC, data centres and mainframe environments. What's changing now is the urgency of its adoption. With AI workloads generating unprecedented heat, traditional air cooling methods are being pushed to their limits.

Whether in hyperscale or neocloud platforms, colocation facilities or classic supercomputing environments, the choice of cooling solution is no longer just a matter of preference – it's a strategic necessity. The thermal demands of modern workloads, system architecture and the specific mix of CPUs and GPUs all dictate the need for more advanced cooling strategies.

Today's AI-optimised data centres are embracing hybrid cooling strategies – blending direct to chip liquid cooling with conventional air cooled racks. This flexible approach allows operators to support legacy GPU generations while preparing for the thermal demands of tomorrow's powerhouses like Nvidia's Grace-Blackwell Superchips and SuperPods, which require advanced direct to chip systems to manage their soaring thermal design power.

Adoption is accelerating. According to the European Data Centre Association (EUDCA), 41 per cent of operators already



use some form of liquid cooling – a figure expected to more than double to 84 per cent within two years. By contrast, another report by The Register found a similar proportion of enterprise organisations (38 per cent) expect to employ some form of liquid cooled data centres by 2026.

Liquid cooling adoption, therefore, is very much demand driven. This shift is not just about keeping

up – it's about staying ahead. Air and hybrid cooling systems are being pushed beyond previous expectations. Some accelerated computing systems, for example, will employ direct to chip liquid cooling with in-row heat exchangers and hot aisle/cold aisle configurations, which in some cases has been proposed as a solution for rack densities of up to 70kW per rack.

Another thing to consider is that our industry is at an inflection point where legacy data centre operators are beginning their liquid cooling journeys, anticipating rack densities of 40kW and beyond.

'WHETHER IN HYPERSCALE OR NEOCLOUD PLATFORMS, COLOCATION FACILITIES OR CLASSIC SUPERCOMPUTING ENVIRONMENTS, THE CHOICE OF COOLING SOLUTION IS NO LONGER JUST A MATTER OF PREFERENCE – IT'S A STRATEGIC NECESSITY.'

Keep IT cool in the era of AI

EcoStruxure IT Design CFD by Schneider Electric helps you design efficient, optimally-cooled data centers

Optimising cooling and energy consumption requires an understanding of airflow patterns in the data center whitespace, which can only be predicted by and visualised with the science of computational fluid dynamics (CFD).

Now, for the first time, the technology Schneider Electric uses to design robust and efficient data centers is available to everyone.

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Equipment Models –
Easily choose from a range of data center equipment models from racks, to coolers, to floor tiles.

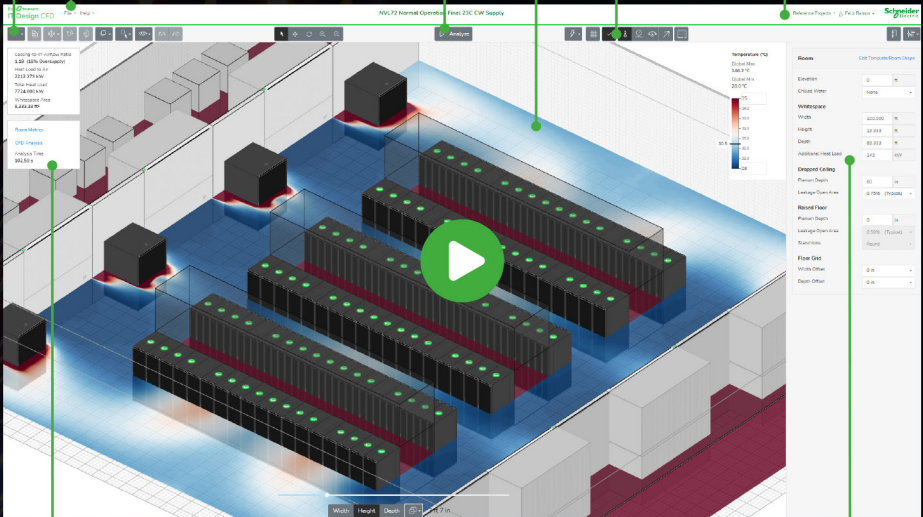
CFD Analysis –
The fastest full-physics solver in the industry delivering results in seconds or minutes, not hours.

Visualisation Planes and Streamlines – Visualise airflow patterns, temperatures and more.

Cooling Analysis Report –
Generate a comprehensive report of your data center with one click.

Cooling Check –
At-a-glance performance of all IT racks and coolers.

Reference Designs –
Quickly start your design from pre-built templates.



IT Airflow Effectiveness and Cooler Airflow Efficiency –
Industry-leading metrics guide you to optimise airflow.

Room and Equipment Attributes – Intuitive settings for key room and equipment properties.

ALISTAIR BARNES

HEAD OF MECHANICAL ENGINEERING AT COLT DATA CENTRE SERVICES

Liquid cooling holds immense promise for data centres as they grapple with the unprecedented thermal demands driven by AI and HPC workloads. Its advantages are clear and impossible to ignore. Liquid, having a much higher heat capacity than air, enables faster and more efficient heat removal from dense server environments. This translates directly into improved energy efficiency and significantly lower Power Usage Effectiveness (PUE) scores.

By allowing for more precise temperature control, liquid cooling supports far greater compute densities, making it possible to meet growing processing demands without expanding the physical footprint of a data hall. It also reduces the reliance on bulky, energy intensive air systems like computer room air conditioning (CRAC) units, freeing-up space and cutting down operational noise. Furthermore, because liquid cooling maintains more stable thermal conditions, it can extend the operational lifespan of IT equipment, reducing hardware failures and maintenance costs over time.

However, despite these clear benefits, adoption has been slow. Primarily, this is because existing data centres were designed for traditional air cooling and retrofitting them to support liquid systems can require substantial infrastructure changes.

There's also a learning curve for operations teams, who may be unfamiliar with managing the unique characteristics

of liquid systems, including leak prevention and fluid handling. While liquid cooling efficiently draws heat away from equipment, that heat is still often released into the surrounding environment, meaning some air cooling remains necessary, particularly in non-immersion set-ups. This makes hybrid systems, combining both air and liquid cooling, the most practical solution today.

To accelerate adoption, the industry must first focus on developing flexible facilities able to house hybrid systems and adapt to new technology. This must take place alongside better education, collaboration and investment in flexible, scalable solutions that help bridge the gap. With the right support, incentives, collaboration and experience, the industry can overcome the current barriers and unlock the full potential of this and other transformative technologies.



'WHILE LIQUID COOLING EFFICIENTLY DRAWS HEAT AWAY FROM EQUIPMENT, THAT HEAT IS STILL OFTEN RELEASED INTO THE SURROUNDING ENVIRONMENT, MEANING SOME AIR COOLING REMAINS NECESSARY, PARTICULARLY IN NON-IMMERSION SET-UPS. THIS MAKES HYBRID SYSTEMS, COMBINING BOTH AIR AND LIQUID COOLING, THE MOST PRACTICAL SOLUTION TODAY.'

SERGE BARANCHUK

SENIOR GLOBAL PRODUCT MARKETING MANAGER AT CPI

Despite being as a highly effective method of managing escalating heat loads, liquid cooling adoption remains slower than anticipated. This disconnect between proven performance and real world deployment is largely driven by a combination of perceived risk, infrastructure inertia and the complexity of integration.

Many remain hesitant to embrace liquid cooling due to concerns about operational disruption and the perceived risks of introducing fluids into electronic environments. Traditional air cooled systems are familiar, entrenched and supported by decades of institutional knowledge.

The liquid cooling market is still fragmented, with a wide variety of vendors, technologies and system architectures available. This lack of standardisation makes it difficult for operators to make confident, future proof investments. Concerns about vendor lock-in, servicing complexities, warranty coverage limitations and integration with existing power and airflow infrastructure also contribute to adoption hesitation.

To accelerate uptake, the industry must move beyond highlighting the business case for liquid cooling. It must instead focus on helping organisations deploy it in ways that reduce risk, simplify adoption and minimise disruption – whether that's through flexible solutions, familiar deployment models or systems that don't require major overhauls.

Direct to chip, waterless liquid cooling solutions that utilise non-conductive fluids offer a safer, more reliable approach to high

density deployments by eliminating the risk of electronic damage in the event of a leak. These systems can support cabinet level power densities exceeding 100kW.



To further reduce risk and complexity, organisations are increasingly turning to fully integrated infrastructure solutions combining cabinet, power distribution, cable management and airflow containment into a unified system. When these components are designed to work together, the result is improved compatibility,

simplified deployment and long-term operational reliability.

Liquid cooling adoption will accelerate when solutions are easy to deploy, scale and support. That means delivering fully integrated systems that simplify design, reduce installation friction and support phased rollouts. Education is also essential, as well as strong support from infrastructure vendors – many IT teams are unaware that liquid cooling solutions today are flexible, serviceable and available in field tested, commercially ready formats.

As energy and density demands outpace what air cooling can support, and as liquid cooling ecosystems mature with plug and play offerings, the market will increasingly favour operators who are ready to rethink thermal strategies and embrace a smarter, more scalable approach.

'LIQUID COOLING ADOPTION WILL ACCELERATE WHEN SOLUTIONS ARE EASY TO DEPLOY, SCALE AND SUPPORT.'

DARREN WATKINS

CHIEF REVENUE OFFICER AT VIRTUS DATA CENTRES

Traditional air cooled systems can struggle to dissipate the heat density associated with AI workloads. Liquid cooling is required for the latest Nvidia and other very high performance chips such as GPUs and tensor processing units (TPUs). However, there are challenges to adoption.

Liquid cooling involves higher upfront costs compared to air based cooling solutions. Overcoming this challenge requires careful cost benefit analysis and long-term planning to demonstrate the ROI in terms of energy savings and performance improvements for AI workloads.

Another reason for the slow take-up of liquid cooling could be summed up by 'if it ain't broke, don't fix it'. In some cases, there's no need to retrofit facilities with liquid cooling if they are already working efficiently. Some more established chips can operate in air cooled facilities and provide very good performance without the need for spending on liquid cooling. Also, availability of the new chips can be an issue, while older, lower performance chips can be 'good enough' and available.

DeepSeek is an example of this approach. It showed how operators can deliver high performance without the need for liquid cooled infrastructure. This has brought into focus the use cases for liquid cooling and how a balance needs to be struck between cost, scale and performance for each specific workload.

The complexity of liquid cooling system design and integration could also be a barrier to adoption. Liquid cooling requires specialised components such as cooling

distribution units (CDUs), which must be carefully integrated into existing data centre infrastructure. This means that retrofitting older data centres can be complex as well as expensive.

Data centre providers are constantly exploring new approaches, such as modular liquid cooling architectures and hybrid cooling solutions, to optimise

heat management and improve overall efficiency. To drive the adoption of liquid cooling there needs to be collaborative partnerships with cooling technology vendors and research institutions. This will enable the development of customised liquid cooling solutions tailored to the specific needs of AI-driven applications.



'LIQUID COOLING INVOLVES HIGHER UPFRONT COSTS COMPARED TO AIR BASED COOLING SOLUTIONS. OVERCOMING THIS CHALLENGE REQUIRES CAREFUL COST BENEFIT ANALYSIS AND LONG-TERM PLANNING TO DEMONSTRATE THE ROI IN TERMS OF ENERGY SAVINGS AND PERFORMANCE IMPROVEMENTS FOR AI WORKLOADS.'

BRIAN O'HARE

SERVICE DIRECTOR AT BCS

It is important to understand the reasons for this reticence:

- There are high initial costs as liquid cooling requires substantial capital investment for specialised equipment.
- There is a current lack of current universal standards, with suppliers offering bespoke solutions with limited compatibility. This leads to vendor tie-in and increased integration risk, while complicating planning.
- Operators have deeper familiarity with air based cooling systems, so there are concerns about leaks and the complexity of maintenance, as well as questions around coolant disposal, material recyclability and long-term environmental impact.
- Finally, not all workloads benefit from the high density cooling capability that liquid systems offer. For lower density applications traditional air cooling is often considered sufficient. This raises questions about whether this is the right thing to do and whether future market shifts due to consumer technology demands might impact any decision.

So, how do you give customers the comfort that the new technology is reliable when it is in its infancy, with no benchmarks

of sustained reliability studies and increased build costs?

The answer perhaps is to focus on the positives. Liquid cooling is significantly more efficient at transferring heat, allowing for higher server densities and reduced

energy consumption, lower energy bills and operating costs. It is currently the best option for cooling AI and other compute intensive workloads. It's also a good option in space constrained environments, delivering more efficient use of rack space and reducing the overall footprint of the data centre.

However, despite modern systems being highly reliable, the presence of liquid near sensitive electronic

components still raises concerns regarding system longevity, downtime and reliability. Reassuring buyers will be key to take-up and there is work to be done here by some of the main players.

'THE PRESENCE OF LIQUID NEAR SENSITIVE ELECTRONIC COMPONENTS STILL RAISES CONCERNS REGARDING SYSTEM LONGEVITY, DOWNTIME AND RELIABILITY. REASSURING BUYERS WILL BE KEY TO TAKE-UP AND THERE IS WORK TO BE DONE HERE BY SOME OF THE MAIN PLAYERS.'



Rising to the top

Part of the market leading Excel Networking Solutions brand, Elevate delivers premium infrastructure without compromising on performance, quality or support. Inside_Network director, **Andrew Percival**, about what Elevate offers and how it aims to bring tomorrow's

IN: Can you explain the Elevate brand and why you have brought it to market?

AP: As part of our growth review process, in September 2024 the Mayflex board made the decision to enter the data centre market. Our success in this vertical had, to that point, been sporadic and relatively small.

Our teams were supported by an external consultancy in evaluating market segments and trends, as we sought to understand operator and integrator challenges, as well as the competition. By December our plan was taking shape – we had defined the launch solutions, identified the partners we wanted to work with on both the supply and customer side, and were clear on the organisational structure needed. We then considered brand, value proposition and future desired market position.

We are extremely proud of Excel – in 28 years we have established the brand as the market leader in the LAN environment across most EMEA markets. However, we recognised that the data centre sector demands a different solution and service set-up to the LAN, whether in rack design, bespoke cables, smart power or precision cooling. As we set about developing entirely new solution categories, it became clear it would make sense to launch these under a new brand with a fresh look and feel, and specific value proposition.

Elevate launched at Data Centre World (DCW) London in March this year and will debut at DCW Paris, DCW Madrid and DCD

Connect London later in the year. There is intent in the name – specifications, features and levels of support are higher, better and more advanced than any of our previous offers.

We feel, and are told by the market, that the time is right for this launch. It is not news to state that the market is growing at an unprecedented rate. This is leading to supply chain bottlenecks, complacency in existing vendor/distributor channels and entirely new operators that need strong, reliable and proactive partners. That's what we are about.

IN: Will the Excel brand continue to be available and developed?

AP: Absolutely! We are expanding our geographical reach by launching in Germany in



ELEVATE

Future Faster

data centre
spoke to its managing
innovation to you today

August, investing in the Middle East, while continuing to launch new products and support services.

IN: What solutions does the Elevate brand offer?

AP: Elevate branding is given to a range of primarily passive solutions. These include fibre optic cables and connectivity, low density LC breakouts and high density MPOs. It also

comprises ultra-high density using very small form factor (VSFF) connectors such as SN-MT, where a density of up to 6,912-fibres per 1U can be achieved. Racks, intelligent power strips, hot and cold aisle containment, and yellow duct complete the current offer.

We have also

announced technology partnerships. For fibre connectivity we are working with Senko using its MPO and VSFF products as our standard. Liquid cooling and high density in rack power distribution comes from nVent, and we have a data centre infrastructure management (DCIM) offer from Sunbird Software.

These partnerships add to the existing IP video and access control solutions we have carried for many years.

IN: What market segments are you targeting and in which countries?

AP: Our solutions are designed to meet the design and performance needs of a wide range of use cases, but we are focusing initially on large on premises/campus main equipment room (MER) and high performance computing (HPC) environments. These are specifically within the enterprise, government and further education market, plus colocation and multi-tenant operators.

Either through direct supply or existing channel relationships, Elevate can be deployed throughout EMEA. In terms of where we will focus initially it's the UK and Ireland, France, Spain, United Arab Emirates (UAE) and Kingdom of Saudi Arabia (KSA). Having said this, we have already won a seven figure deal in Benelux!

IN: What makes Elevate different to other solutions on the market and what is the value proposition?

AP: Our solutions stand up to comparison with established vendor offers. Where standards apply, we meet or exceed them.





For example, by choosing low loss connectors and B2ca cable in our fibre offer, where premium options are offered by others, we include them as standard. Another example is how we standardise on automated doors and skylights in our aisle containment.

Where we intend to reset the bar is service. Regardless of scale every MER, HPC and data centre deployment is, by definition, mission critical. Our solutions will scale and meet performance requirements.

Future faster is the Elevate promise. Our supply chain model will slash lead times and make just in time, in country availability a reality not a hope. From investing in UK MPO (and soon to be VSFF) termination facilities, UK rack assembly and configuration, yellow duct in weeks not months, and the industry's shortest built to order lead times for rear door heat exchangers and high density intelligent power distribution units (IPDUs), we are on the side of rapid deployment and shorter build times.

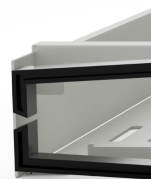
Lastly, we know that the right solution,

made to exacting standards in the shortest time possible, is not the complete picture. Deployment at scale and pace needs a supply chain with the same characteristics. We are owned by Sonepar, an organisation that is present in 40+ countries across three continents, with revenues in excess of €32bn. Sonepar is a family owned business that puts the customer experience first. No passive brand supplier can match this scale, reach and ownership model – the mix of which offers certainty, consistency and risk mitigation to all stakeholders.

IN: How will you support customers who want to work with Elevate?

AP: We will listen, learn and be proactive – that's how we have always run the business and supported the brands we offer. The launch offer in terms of solutions and supply chain comes directly from this approach and will be improved and added to as we move forward.

In addition, we are investing.



'Future faster is the Elevate promise. Our supply chain model will slash lead times and make just in time, in country availability a reality not a hope.'

A new Elevate business development team is being built with two experienced new colleagues joining from cooling and power vendors. We continue to look for more talent with strong new business experience, so if you are reading this and can make a difference then get in touch!

Our pre-sales and product management teams are developing configurators and design tools to support customers selecting the right fibre, duct and aisle systems. All Elevate solutions can be viewed in our London and Birmingham showrooms, where visitors to the latter can also experience our fibre termination and rack build facilities.

IN: What are your ambitions for the brand?

AP: Given the scale and forecast growth of the market it would be easy to reel off some telephone numbers and seek world domination! And yes, ultimately, we are determined to see the Elevate brand succeeding internationally, generating eight figure revenues. However, this is a long-term initiative, so one step at a time – which is hard for me to say as I am very impatient!

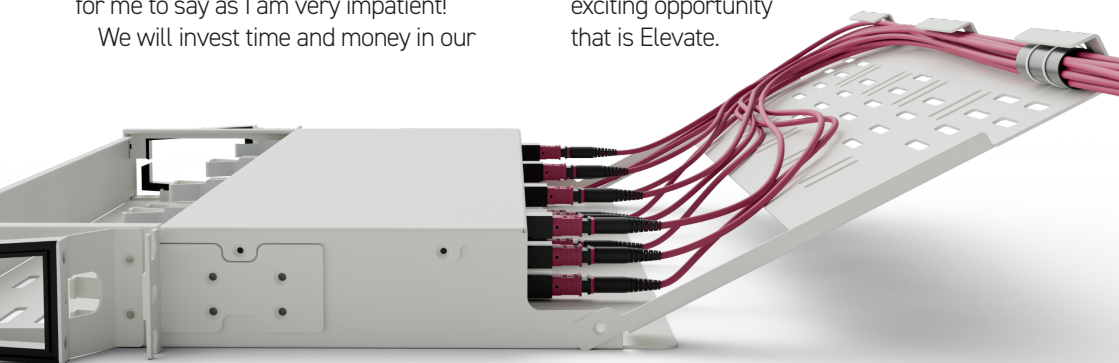
We will invest time and money in our

people, building brand awareness and credibility – and, most importantly, customer trust. If we succeed in these areas, I am confident the order book and client numbers will start to build.

IN: What challenges do you see in achieving these ambitions and how will you overcome them?

AP: Any new business initiative has a raft of challenges – some stick around, others fade. I think in this instance we could simply summarise what we need to overcome under the heading of 'time'.

The market and the tech being deployed is moving at an incredible speed. Our pace must match this, be it in response times, service and solution development or just moving materials through the supply chain. Our target customers are busy, so we need to find time in their schedules to present Elevate. Internally our teams are busy across EMEA managing a successful, growing business, so we must maintain this but also give quality time to the new and exciting opportunity that is Elevate.



Fulfilling the prom

Applications for artificial intelligence (AI) at the edge are growing in number and value, even with the challenges inherent with this type of environment. **Steven Carlini** of Schneider Electric examines how existing expertise and capability in the industry can overcome these issues

▶ Since the term edge computing was coined some three decades ago, it has evolved along various lines. Driven by developments in connectivity such as 5G and Wi-Fi 7, as well as compute and storage, edge computing is being applied in various functions to bring compute power close to where it is needed.

NEAR THING

Most recently, with the coming of age of AI, businesses have been exploring how to bring AI closer to where it is needed, benefiting from all the advantages of edge computing in terms of low latency, data availability and bandwidth. AI at the edge can now be used to transform industries and applications, delivering tangible benefits of lower data transfer volume and cost, higher speed and lower latency. AI can deliver productivity through process efficiency and task automation, decision making (simple or complex) and content generation.

Edge AI has also developed to become specialised in certain areas such as energy grids, where massive amounts of data generated from ever greater energy mixes from renewable energy sources like wind and solar and energy storage comes online. This data needs to be processed to enable automation, matching the demand elasticity, consumption monitoring and

forecasting, power quality and renewable energy routing.

Local edge AI can evaluate data from all local distributed energy resources and automates delivery based on the required parameters set by the customer, which may include cost, as well as being renewable and reliable. Edge AI can not only route the right power to the consumers, but it



also predicts patterns and makes decisions using weather, use rates, grid maintenance

nise

schedules and catastrophic events for more efficient generation and the distribution and storage of energy resources.

STRAIGHT UP

This kind of capability is also being applied in other verticals such as retail, medical and healthcare services, with diagnostics and robotic procedures at the edge. Leveraging verticalised AI means that organisations can move faster than ever before, providing more automated options, optimised resource allocation and, perhaps the most popular use case today, predictive analytics

These dedicated AI models are usually smaller than their training counterparts, often processing lower amounts of data, and need a smaller and less powerful IT stack, as well as less power back-up and cooling. This IT may use far fewer graphics processing unit (GPU) accelerators, for example, or possibly need only high powered central processing units (CPUs) and commodity hardware. The IT stack configuration needs will depend not only on the quantity of the data but also on the speed and accuracy that the application requires. The opportunities for AI at the edge are obvious.

NUMBER CRUNCHING

A recent report by JLL found the global edge data centre market will reach \$317bn by 2026, representing 107 per cent growth since 2020. The report highlights that the continued global rise of data dependent technologies requires significant IT infrastructure support from edge data centres, predicting a compound annual growth rate (CAGR) of 9.8 per cent over the next five years. It goes on to say that businesses demanding these improved services, including generative AI (GenAI), are expected to explore more edge opportunities.

However, edge AI is not without its challenges. Firstly, there are issues of cost. The latest Nvidia GB200 NVL36 server rack system is estimated to cost \$1.8m and the NVL72 will be \$3m. While there are arguments that AI deployments can be achieved with older generations of GPUs and commodity hardware, there is still significant cost to deploying the kind of



for maintenance to minimise system downtime.

‘While there are arguments that AI deployments can be achieved with older generations of GPUs and commodity hardware, there is still significant cost to deploying the kind of compute power needed to power AI at the edge.’

compute power needed to power AI at the edge.

POWER PLAY

The next challenge is power itself. Even paired down models of AI at the edge that are working in inference rather than learning modes require significant amounts of energy. Availability of energy at the edge may be more of a challenge than in centralised data centres.

Service industries such as hospitality are looking at AI for demand analysis and prediction. An example is a hospitality business in proximity to a major venue such as a sports stadium that may also host entertainment. If the proprietor can predict the demand around the crowds for an upcoming fixture – such as tastes in food, merchandise, accommodation and transport – through AI analysis of publicly available data, they can be forearmed for the opportunity. However, if their business is energy constrained and must choose between running their restaurants or their AI, the choice is limited.

TAKING ADVANTAGE

Another issue is complexity, with many

businesses facing issues concerning exactly how AI can be developed to deliver advantage. Even Johnson & Johnson recently admitted that it had reduced almost 900 individual use cases to a mere handful, as it tracked the broad value of AI, including GenAI, data science and



intelligent automation. It found that only 10-15 per cent of use cases were driving 80 per cent of the value. This is compounded with edge AI, as the more specialised, narrow applications means that there is even less latitude for extraneous capability.

Deployment and operation are also issues for edge AI. Despite the potential footprint reduction from a specialised, vertical

specific AI model being deployed for a clearly defined use in close proximity to data and need, there is still a requirement to rightsize a solution to reliably work in a potentially challenging remote environment. While there is always the potential for AI-enhanced management systems to optimise deployments, these systems must be easy to configure, deploy and operate, often without specialist handling on the ground.

MEETING THE CHALLENGE

A potential solution to at least some of these challenges is the trusted approach of modular design and deployment. Reference designs for AI deployment are a sound approach to ensuring effective, efficient capabilities and operation, reducing risk and potential for overrun. By working with trusted partners, reference designs can ensure that operators achieve their design and operational requirements confidently for edge deployments. Secondly, lessons learned from modular data centre deployments from diverse, remote and challenging environments can be applied to edge AI too.

The ability to design with the most efficient, robust and resilient equipment, rightsized and in modular form, enables designers to focus on the features and facilities necessary for edge AI. This ability means that local energy constraints could also be addressed, with the ability to easily integrate dispatchable energy sources, from hydrotreated vegetable oil (HVO) powered generators to battery supported renewable energy sources. A modular deployment guarantees the flexibility to expand predictably, even for AI workloads.

GOLDEN OPPORTUNITY

AI at the edge continues to offer tantalising

opportunities for an increasing number of functions, sectors and businesses – if the challenges can be overcome. Leveraging the existing experience, expertise and technical capabilities of the data infrastructure industry through reference designs, edge computing experience and modular data centre deployments will ensure that AI at the edge can be deployed confidently at reduced risk reliably. ■



STEVEN CARLINI

Steven Carlini is vice president of innovation and data centre at Schneider Electric and is responsible developing integrated solutions and communicating the value proposition for Schneider Electric's data centre segment including enterprise and cloud data centres. A frequent speaker at industry conferences and forums, Carlini is an expert on the foundation layer of data centres and has been responsible for guiding the direction of many industry changing products and solutions that solve real customer problems or give businesses competitive advantage.

Schneider Electric

Schneider Electric has developed new data centre solutions specifically engineered to meet the intensive demands of next generation artificial intelligence (AI) cluster architectures. Evolving its EcoStruxure portfolio, the company's prefabricated modular EcoStruxure Pod Data Centre solution consolidates infrastructure for liquid cooling, high power busway and high density NetShelter Racks.

In addition, EcoStruxure Rack Solutions incorporate detailed rack configurations and frameworks designed to accelerate high performance computing and AI data centre deployments. The new EcoStruxure



Pod Data Centre and EcoStruxure Rack Solutions are now available globally.

Organisations are deploying AI clusters and grappling with

extreme rack power densities, which are projected to reach 1MW and beyond.

Schneider Electric's new line of solutions equips customers with integrated, data validated and easily scaled white space solutions that address new challenges in pod and rack design, power distribution and thermal management.

[CLICK HERE](#) to find out more.
www.se.com

R&M

R&M's 19-inch modular Freenet cabinet system includes the heavy duty Freenet Superior, suitable for installing a larger number of heavy devices. A basic frame can be

upgraded to the Superior version with a load capacity of 1,500kg.

Areas of application are enterprise, edge, modular and colocation data centres. The cabinet

system makes it possible to flexibly plan infrastructures in computer rooms and adapt them to new requirements. R&M inteliPhy net data centre infrastructure management (DCIM) software can also



support infrastructure planning.

Freenet Superior cabinets can be screwed together to form seamless rack rows. R&M has developed electronically

controlled and mechanically operated door systems, while air guide plates for individual cabinets can be used to strictly separate cooling air and waste heat. Closed cold aisle corridors and cubes can be

set-up in combination with sliding doors, roof elements, cable runs, screens and bulkheads.

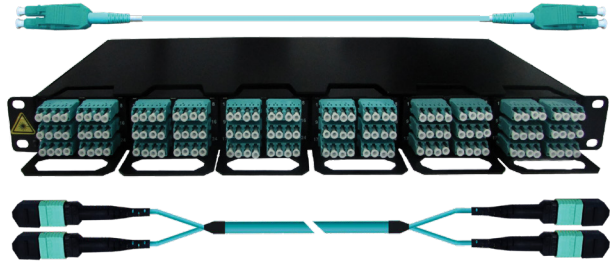
For further information [CLICK HERE](#).
www.rdm.com

STL

STL delivers high performance, end to end optical fibre cabling systems tailored for data centre inside plant (ISP) applications, especially for the white space area.

STL's solutions are designed to simplify complexity and support seamless network upgrades. STL offers a complete range of LC and MPO connectivity in singlemode and multimode (OM3/OM4) variants. Low loss assemblies enable cost effective edge deployments, while ultra-low loss options ensure superior performance in high speed core applications.

All MPO assemblies and cassettes follow Method B polarity for consistency and ease



of use. [Our structured cabling systems](#) are fully compliant with global standards – ANSI/TIA-942, TIA-568 and ISO/IEC 11801 – and are backed by a 25-year performance warranty. STL's structured cabling solutions are engineered for scalability, performance and long-term reliability.

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

HellermannTyton

HellermannTyton is very excited to launch its very own fibre raceway solution – GigaDuct. With the addition of GigaDuct to its existing data centre solutions range, HellermannTyton can now offer a complete system with a number of connectivity and cable management options that are designed for the data centre market.

Available in a range of duct sizes, GigaDuct offers a wide variety of bends, elbows, junctions and joiners. This provides endless possibilities in terms of fibre raceway design within the data centre or optical fibre exchange.

GigaDuct is a robust, scalable cable

management system, engineered specifically for organising and protecting fibre optic cables in the data centre.

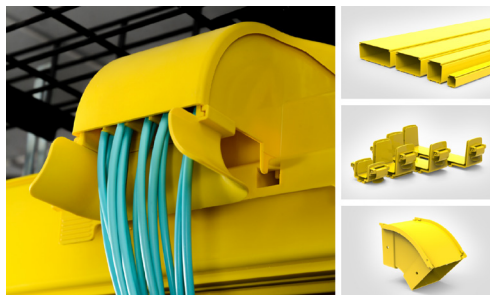
Constructed with precision, GigaDuct

provides a dedicated fibre pathway that prevents cable congestion, minimises physical stress on fibres and facilitates efficient cable management.

Whether you are designing a new data centre or upgrading an existing one, GigaDuct from HellermannTyton offers unmatched versatility and reliability.

[CLICK HERE](#) for more information on GigaDuct.

www.htdata.co.uk



Sizing it up

Chris Wellfair of Secure IT Environments (SITE) offers some tips on choosing and deploying micro data centres

▶ The amount of computing power and storage that can now sit inside a single cabinet is extraordinary. At a time when we are relying on compute power for even more in the business world, from traditional computing workloads to the internet of things (IoT), artificial intelligence (AI), CCTV and building management systems (BMS), it has allowed IT and network managers to get more out of the infrastructure they have invested in.

FIT FOR PURPOSE

It has also made it possible to reduce the size of the overall data centre to a point where for many businesses a dedicated room or building is no longer essential. This can even be true in a remote location, where local IT is needed but must be secure and hardened to the environmental conditions that it might encounter.

Known as micro data centres, these cabinets can be small enough to fit in an office room and may even be found in corners of large production sites – on the network edge – supporting IoT devices on manufacturing lines or providing local redundancy in the event of a network failure. Many assume micro data centres are little more than distribution cabinets but this couldn't be further from the truth. They can house the same technical equipment a traditional data centre might, with an impressive level of processing power given the small size and efficiency of modern blade servers.

FEATURE PACKED

Processing power alone is not the only factor when considering micro data centres. Units come in a range of sizes and include all the same technology that would be expected in a dedicated data centre or larger facility including cooling, environmental monitoring, uninterruptible power supplies (UPS), CCTV and access control, and even fire suppression. All this



in cabinets starting at just 24U in height.

These discrete cabinets can be placed in spaces that would have been unthinkable before – plant rooms, unused cupboards, manufacturing shop floors or very small rooms. They can even run silently in office space or under a desk and can be a perfect solution in a building that has restrictions, such as listed status, that halts the building of a modular data centre.

DESIGNING AND BUYING

A micro data centre is not a short cut to delivering a data centre. Construction and installation times may be quicker but there are several considerations when it comes to ensuring that you choose the right products and implement a solution that

will have a long future and not need to be replaced prematurely.

- **Location.** Although a micro data centre should give you many more choices about where it is located, they need to be suitable. Is that space likely to change in the coming years? Can you provide power and networking to the location? Are there environmental considerations and can the floors cope with the weight of a fully loaded cabinet?

- **Noise levels.** If you are locating the data centre on a production line, this may not be too much of a concern. However, if it is going to consist of multiple cabinets or be in an office environment special care



‘Although a micro data centre should give you many more choices about where it is located, they need to be suitable. Is that space likely to change in the coming years? Can you provide power and networking to the location? Are there environmental considerations and can the floors cope with the weight of a fully loaded cabinet?’

needs to be taken to ensure it will not stop other people being able to easily speak and hear one another or interfere with their productivity. Take care to consider whether your supplier has sound proofing options – and how effective they are.

- **Security.** The level of security that can be built into a micro data centre includes rack level locks, biometrics, CCTV and access logging to protect high value assets in vulnerable locations. Staff and visitors may be passing your micro data centre throughout the working day, as well as other operational staff at night, so it must be protected. Other considerations that impact security are the physical location. Don't, for example, locate it where it could be easily stolen, such as on a ground floor near a glass door that could be ramraided.

- **Utilities.** Depending on the role that a new micro data centre will fulfil, you will need to be sure that adequate power and networking infrastructure can reach the location. This may require making modifications to other locations to route cabling but you can, of course, choose a different location for the micro data centre, which is

one of its main benefits.

- **Cooling and power efficiency.** Whilst micro data centres can be very compact, this does not negate the need for careful consideration of cooling and power. Fortunately, micro data centres can accommodate all the same power and



cooling infrastructure that would be seen in a traditional data centre. Choices such as liquid or air cooling can reduce the space needed in cabinets and this can all be incorporated at the design stage. The same is true for UPS devices and fire protection.

- **Monitoring and management capabilities.** Environmental sensors, remote management tools and centralised dashboards enable proactive control over conditions like temperature, humidity and power usage. A micro data centre can incorporate all this technology and this is particularly important in locations where they won't be seen. Unlike traditional data centres, they are, by definition of their size, not data centres where staff will be noticing environmental changes.

- **Compliance and regulatory requirements.** Micro data centres must still comply with regulations such as ISO 27001, General Data Protection Regulation (GDPR) and environment specific regulations depending on their deployment location. A micro data centre can fulfil all these requirements but it is important they are considered as part of the overall design.

- **Future proofing.** One final consideration is scalability and your future strategic IT goals. Remember to design for tomorrow not just today. This might mean purchasing slightly larger cabinets that allow you to add servers or storage, but equally valid would be knowing

that you have the space for additional cabinets without causing environmental impacts, such as noise, for employees working near them.

TAKING THE ADVANTAGE

Micro data centres offer a creative and flexible way to widen the tools your business can use to meet its goals without tearing up an existing data centre, especially if cost or construction restrictions are a consideration. Don't rule them out and remember they use all the same core technologies as a traditional build, but with a host of unique advantages. ■



CHRIS WELLFAIR

Chris Wellfair is projects director at SITE. He has over 20 years' experience in designing and delivering data centres in mission critical and challenging environments across a wide range of sectors including healthcare, financial services, retail and the wider public sector.

Schneider Electric accelerates the development and deployment of AI factories at scale with Nvidia

Schneider Electric is collaborating with Nvidia to serve the growing demand for sustainable, artificial intelligence (AI) ready infrastructure. The two companies are advancing research and development (R&D) initiatives for power, cooling, controls and high density rack systems to enable the next generation of AI factories across Europe and beyond.

Schneider Electric and Nvidia are responding to the European Commission's AI Continent Action Plan. This initiative outlines a shared mission to set-up at least 13 AI factories



Olivier Blum

across Europe, while establishing up to five AI gigafactories.

Olivier Blum, CEO of Schneider Electric, said, 'Together, we've seen tremendous success in deploying next generation power and liquid cooling solutions that are purpose built for AI data centres. This strategic partnership – bringing together the world leaders in sustainability and accelerated computing – allows us to further

accelerate this momentum, pushing the boundaries of what's possible for the AI workloads of tomorrow.'

Black & White Engineering appoints Timm Weis to drive German expansion

Black & White Engineering has appointed a new country lead to head-up its growing Frankfurt operation and accelerate expansion in the German data centre market. Timm Weis joins as country manager following more than a decade in mechanical, electrical and public health (MEP) design for mission critical infrastructure, bringing extensive experience of delivering complex data centre projects across Germany for global



Timm Weis

clients.

Weiss said, 'Germany's data centre market is developing rapidly and our role is to help clients stay ahead, whether that's navigating local planning processes, improving energy performance or delivering complex builds at scale. We're building a team in Frankfurt with the technical expertise and local understanding needed to support that growth with precision and purpose.'

Team Mayflex completes fifth ultra walk for Alzheimer's Society

A team of intrepid walkers from Mayflex recently completed a fifth challenge, raising vital funds for Alzheimer's Society. This year saw them take on the rugged terrain of the Lake District in inclement conditions. Amanda Griffiths, Tracey Kernaghan and Lyn Gale tackled the 50km Ultra Challenge, while Liz Evans and Margaret Butterfield completed the 29km route.

Reflecting on the experience, Tracey Kernaghan commented, 'The day began with torrential rain, turning stony paths into fast flowing streams. The first 29km were brutal, with steep climbs and treacherous descents. Thankfully, the weather improved later and



we enjoyed a scenic walk around Lake Windermere. We completed the 50km in just over 12 hours – and stayed blister free! Liz and Margaret may have had a shorter distance, but they certainly faced the most challenging section of the route.'

She continued, 'We take on these challenges to raise money for dementia research and support. Amanda, Liz and I have each lost a parent to this devastating disease. We're incredibly grateful to everyone who has

supported us and there's still time to donate.'

You can donate by [CLICKING HERE](#).

CHANNEL UPDATE IN BRIEF

EfficiencyIT has appointed Anthony Soares as defence lead consultant, reinforcing its commitment to the UK's public sector and defence markets. His leadership will support EfficiencyIT's growing government portfolio with prefabricated, artificial intelligence (AI) ready data centre solutions.

Mayflex has once again picked up an award from Fluke Networks for UK Sales Team of the Year 2024. Mayflex won this award for a second year running, which recognises the effort of its internal and external sales teams and its commitment to sell and support the Fluke Networks brand.

Altnets was the only telecoms company in the UK to be listed in the small organisation category of The Sunday Times Best Places to Work 2025. Published by The Sunday Times in partnership with WorkL, the annual list acknowledges businesses in the UK that exhibit exemplary inclusion, wellbeing support and satisfaction among staff members.

Mike Giresi has joined Vertiv as global chief information officer (CIO), leading company initiatives in AI adoption across the business, cybersecurity, product security and digital enabled productivity and customer experience.

Playing it safe

From ‘street to seat’ security to safer communities, **Mark Green** of LMG looks at how smart building access control now protects people and places

Just a few years ago a robust access control policy was measured purely by how effectively it kept the wrong people out. Today the yardstick has shifted. Hybrid working, flexible hours and a sharpened duty of care agenda mean organisations are judged on how well they keep their people safe wherever they are – on the street outside the office, on a client site or travelling between buildings.

MUCH OBLIGED

In the UK, the Worker Protection (Amendment of Equality Act 2010) Act 2023 broadens an employer’s obligations. Meanwhile, the recent Terrorism (Protection of Premises) Bill – better known as Martyn’s Law – will cement a legal requirement for venues to prove they have taken ‘reasonably practicable’ steps to protect lives.

The conversation has expanded from physical security to personal safety. The humble access control system has evolved into a data rich safety platform, and initiatives such as WalkSafe are extending

the protective perimeter from the front door to every stage of an employee’s commute.

GETTING IT RIGHT

Smart cameras, phone credentials and artificial intelligence (AI) analytics grab headlines but none of them work if the



core access control infrastructure is weak. A hardened controller architecture – with signed firmware, transport layer security (TLS) encrypted comms and secure configuration by default – now underpins every best practice deployment.

Open standards such as the Open Supervised Device Protocol (OSDP) have replaced insecure Wiegand links. At the same time, credential technology has leapt from easily cloned 125kHz cards to DESFire EV2 and mobile IDs stored in a phone's secure element.

Crucially, these engineering choices support both integrity by stopping malicious entry and safety by ensuring accurate location data. A cloned card, for example, does more than let an attacker slip through reception. It also corrupts the occupancy record used by emergency responders. In terms of personal safety, it could place a vulnerable staff member at the wrong location.

FRictionless Inclusive Access

The coronavirus pandemic accelerated demand for touch free journeys. Mobile credentials, combined with automated doors and lift destination control, now allow an employee to enter the office, summon a lift

and find their desk without once presenting a plastic card.

Beyond hygiene, the inclusive design benefits are significant. Visually impaired building users can receive audible wayfinding cues, those with physical disabilities avoid struggling with turnstiles or reach scan actions. Visitor pre-authorisation and temporary mobile credentials make visitor management and visitor access frictionless and secure.

Biometrics – particularly face and iris recognition – sit at the top of the convenience hierarchy. The key is optional enrolment, backed by transparent privacy policies, so that people retain agency over how they identify themselves.

GET YOURSELF CONNECTED

Once access hardware is connected to IT networks, every door swipe or mobile tap becomes a data point. When that data is normalised into a single security information platform, alongside lifts, lighting and CCTV analytics, it yields insight that protects assets and people.

Proximity counts can tune heating, ventilation and air conditioning (HVAC) delivery room by room, ensure catering requirements and other consumable resources are accurately forecast, thereby reducing waste at every level. Granular occupancy heatmaps reveal lone worker patterns after dark. More importantly for safety, the same platform can flag anomalies. For example, if an employee badges into Level 3 but never arrives at their desk, a real time exception alert from a sensor can prompt a welfare check.

The movement towards open, GraphQL exposed application programming interfaces (APIs) means these events can escape the silo of a security operations centre (SOC). Human resources teams



‘As building systems, personal apps and public sensor networks blend, the corporate perimeter dissolves into the fabric of the city.’

can cross-reference location logs with wellbeing programmes and facilities managers can correlate footfall with maintenance requests. The result is an enterprise that anticipates risk rather than merely records it.

TREND SETTING

LMG’s integration of WalkSafe Pro into the access control stack exemplifies this trend. When a lone employee triggers the WalkSafe timed journey feature after leaving Site A, the SOC receives estimated time of arrival (ETA) updates on the same dashboard that shows door and camera events.

If the employee fails to check in, the system escalates an SOS, complete with last global positioning system (GPS) fix and video wall pop-up. Because WalkSafe events are treated like any other security

input, operators respond within the same workflow, avoiding the ‘swivel chair’ problem of disparate apps.

EXTENDING THE PERIMETER

Recent surveys show that around half of UK employees, rising to two thirds of women, feel less safe on the streets after dark during winter months than inside a building. Access control data stops at reception, while personal safety apps start on the street. Bridging that gap is now part of corporate duty of care.

WalkSafe’s Safe Spaces network tackles the issue by enrolling retail outlets, construction sites and partner offices in a shared map. Any WalkSafe user who feels threatened can detour to one of these vetted locations, where trained staff and CCTV coverage offer refuge while help is summoned. LMG is onboarding client

lobbies to the scheme, creating a virtuous circle –organisations make their lobbies available as Safe Spaces and, in return, receive anonymised incident heatmaps that help focus their own security patrols.

STEP TO IT

Under the Worker Protection Act 2023, employers must take ‘all reasonable steps’ to prevent workplace harassment. While legal guidance is still forming, safety technology provides measurable evidence of those steps. Automated audit trails show that lone workers activated timed journey features,



that SOC operators acknowledged alerts within service level targets, and that Safe Space partners were pre-screened.

Martyn's Law, which came into effect in April 2025, imposes a comparable duty on venues to mitigate the threat of terrorism. Access control analytics feed the plan, protect, prepare cycle and confirm maximum occupancy assumptions, validate lockdown sequencing and inform emergency exercise reviews. WalkSafe, meanwhile, doubles as a mass notification channel, pushing evacuation instructions straight to an employee's phone, even if they are across the street buying lunch.

INTELLIGENCE LED SAFE CITIES

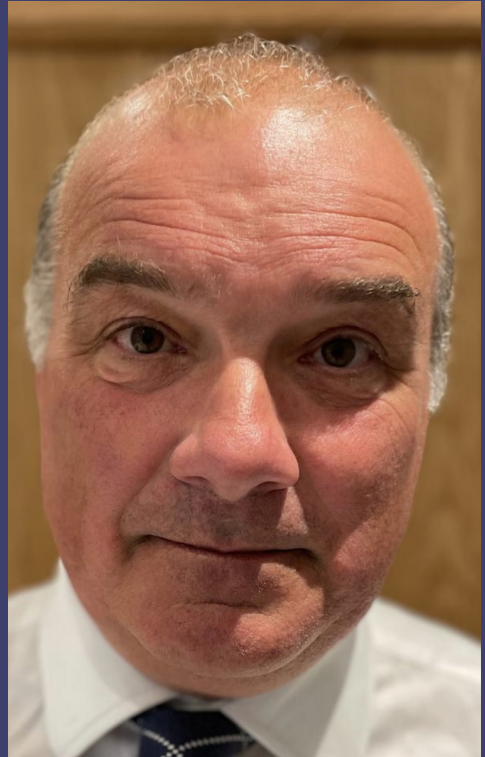
As building systems, personal apps and public sensor networks blend, the corporate perimeter dissolves into the fabric of the city. Pilot schemes are already sharing anonymised WalkSafe alerts with local authorities to inform streetlighting schedules and police patrol zones. In the future, an access control badge event could automatically extend Safe Space coverage to a pop up retail kiosk, while AI predicts high risk routes based on real time crime reports.

Cybersecurity will remain the lynchpin. If application programming interfaces (APIs) are the arteries of this ecosystem, zero trust architecture is the cholesterol screen that keeps it healthy. Encrypting reader traffic, rotating certificates and hardening mobile software development kits (SDKs) is the life support of employee safety tech.

BUILDING TRUST

Physical security has evolved from locks and lenses into an ecosystem that protects people as well as places. By unifying hardened access control infrastructure with data driven intelligence

and community safety apps like WalkSafe, organisations demonstrate compliance, strengthen culture and, most importantly, help every employee travel from street to seat, and back again, with confidence. ■



MARK GREEN

Previously in the Royal Electrical and Mechanical Engineers, for the last eight years Mark Green has been a physical security specialist at LMG. With over 30 years of security experience, he supports the security team within LMG including commercial and operational requirements for design and build projects. His previous experience includes working as a project manager at Heathrow Airport and overseeing the upgrade of access control systems for Barclays Bank.

Austin Hughes

The Austin Hughes InfraSolution Z-3001 access control solution provides a high level of rack access security, whilst supporting power over Ethernet (PoE) to reduce implementation time and the expense of having electrical power cabling installed.

The compact Z-3001 control box is compatible with a variety of rack handle packages, which allows flexible and simple integration to upgrade third-party IT server racks.



including temperature, humidity, smoke, shock and water leakage.

There is also integration support to third-party alarm systems, as well as an optional LED beacon for alerting users as soon as an issue occurs. It is expandable to power

and cooling management equipment via connection to InfraPower M series serial intelligent rack power distribution

InfraSolution Z-3001 provides a complete remote rack access solution with monitoring, control, alarm and reporting. A wide range of sensors are available for complete environmental monitoring

units (iPDUs) and InfraCool intelligent fan units respectively.

To find out more [CLICK HERE](#), or to send an email [CLICK HERE](#).
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Protect your tech

Paul Richardson of Stellium Datacenters explains why achieving the right blend of physical, technical and human security is the only way to provide a consistently safe and controlled environment

 Ensuring the physical security of assets deployed in a data centre is critical, further evidenced by the UK government's recent declaration that data centres are now part of the nation's critical national infrastructure (CNI). For operators of modern colocation facilities, security is an absolute prerequisite and they must prioritise having the people, systems, processes and experience in place to deliver the secure data services expected. This is demonstrated by their ongoing compliance with recognised industry accreditations, which are only awarded following rigorous independent annual auditing.

PHYSICAL FITNESS

Data centre physical infrastructure should encompass a multi-layered security approach. First off, to enhance the integrity and security of the data centre itself, the physical building structure should normally have the minimum number of windows, ideally bullet proof, and be of steel and concrete construction.

However, to significantly increase protection, the safeguarding of a data centre starts with a 2.5m perimeter fence line, clearly identifying the boundaries. To obtain access past the perimeter of the fence line, a vehicle or individual would need to access a turnstile, heavy duty speed gate or even an external gatehouse manned by a security team.

The speed gate should also include

barriers, bollards or concrete pillars. These are crucial to providing protection from unauthorised people. Additionally, the extreme perimeter inside the security fence should be fitted with infrared beams in case an intruder bypasses the access points, ensuring their motion triggers an alarm activation.

CAUSE FOR ALARM

Surveillance systems also play a vital role and external CCTV should be used throughout a data centre to identify risks and enable its security team to complete visual patrols of the site. A combination of pan tilt zoom (PTZ), bullet and infrared night vision cameras, as well as automatic number plate recognition (ANPR) technology and motion sensors will ensure a site is well protected.

To add extra layers of security to the CCTV system, facial recognition can be used at one location or throughout. This will provide further information on identifying building occupants and their movements, while helping to ensure any unauthorised access is controlled and managed.

The perimeter of a data centre itself should be protected by an intruder alarm system linked to movement, door and window sensors. When activated, the alarm will alert the on-site security team and/or an external remote alarm monitoring station. All fire exits and doors leading to an external location should be equipped with a door contact. Further steps for sensitive



areas might include positioning of infrared beams or the use of physical locks where human interface device (HID) readers may not suffice.

RISK MANAGEMENT

Robust access control requires a comprehensive risk management strategy. This should be implemented by a competent team to identify and, if necessary, increase any security measures already in place.

For example, airlocks ensure only authorised personnel have access to the approved levels of the building and mitigate the risk of tailgating. However, should the risk assessment identify a requirement for further measures to be implemented, multi-factor authentication and data encryption can be added to protect assets against unwanted physical or cyberattacks.

Moreover, to minimise threats a data centre will need to ensure the lowest level of connectivity to its core network. This is to mitigate risk of attack to any of its systems, therefore keeping most of its software applications as stand alone.

IDENTIFICATION PARADE

Strict access protocols must exist within a data centre for all personnel including staff and visitors. Anyone attending must present a valid form of identification with anything less than government issued identification usually considered unacceptable.

Furthermore, it is vital the security department, which may be in-house or outsourced, is not only qualified and holds a Security Industry Authority (SIA) license but is also able to work in a highly professional environment with the ability

‘For operators of modern colocation facilities, security is an absolute prerequisite and they must prioritise having the people, systems, processes and experience in place to deliver the secure data services expected.’

to make decisions and work as a team. The facility and security teams should complete all training required to work at a high level, sensitive site and in accordance with a globally recognised ISO certified standard or European Union Code of Practice. This will underpin the data centre’s protection with robust controls, policies and procedures in place including across security awareness, cyber essentials and end user training.

A data centre should deploy managed access lists internally to ensure building occupants can access the building 24/7 and access pre-approved areas. The management of the access lists should be directly controlled by the data centre operator to allow for a more robust security system. A visitor management system (VMS) should be used to record visits, replacing the need for paper based documentation, while allowing for real-time events and reporting. A VMS will not only record their presence on-site with a digital signature but also capture an image of each individual.

CONTROL SYSTEM

A proprietary access control system



will allow a security team to allocate the authorised access level to every individual, with their movement recorded via a HID and/or biometrics where required. All movements within the building are then reportable and available to those

authorised to access records.

As part of this, the data centre should be organised with zones assigned to each room, allowing for extra security measures to be enforced in certain zones such as anti-passback, thereby mitigating the risk of individuals tailgating into areas they are

not authorised to be in. The access control system should also be set-up to send alarm signals to the security team if doors are forced or held open for a defined period.

Incident response planning plays a key role in ensuring the security of a data centre. Penetration tests should take place at regular intervals to allow testing of the physical and cybersecurity elements. Tests carried out can include desktop scenario based and real time events. To ensure all risks are managed, all outcomes from the testing can be added to the risk assessment.

Technical security infrastructure and operational security protocols have created a very high security resilient environment

for data centres. In time we expect cable landing stations to be identified by the UK government as CNI.

MIX AND MATCH

The modern data centre is a dynamic

environment. With the right combination of physical, technical and human security it will operate effectively, delivering a consistently secure and controlled environment on a 24/7 basis. Using advanced facilities with comprehensive physical security measures, combined with granular access control regimes employing strict protocols, means the burden, expense and risk of ensuring physical security of assets is significantly reduced. ■



PAUL RICHARDSON

Paul Richardson is operations manager at Stellium Datacenters. With two decades of experience in business management, customer service, security operations and health and safety, he has worked for Stellium Datacenters since 2016, managing the operations of the site.

Quickclicks

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

Impact Of AI On Cyber Threat From Now To 2027 is a **National Cyber Security Centre (NCSC)** assessment highlighting the impacts on cyber threat from AI developments.

CLICK HERE to download a copy.

Liquid Cooling In Data Centers: Types, Benefits And Deployment Tips is a blog by **Chatsworth Products (CPI)**.

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Rodents: The Biggest Threat To Fiber Access Network Cabling? is a blog by **R&M**.
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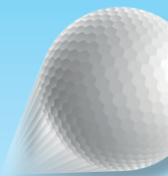
Data Center Digital Twin: Modeling, Planning, And Visualization Of All Your Sites is a blog by **Sunbird Software**.
CLICK HERE to read it.

Base-8 Versus Base-12: Which Fiber Cabling System Is Right for You? is the question posed in a blog from **Siemon**.
CLICK HERE to read it.

Building Sustainable Data Centers: Why Keeping IT Cool Is Key is blog by Ali Haj Fraj of **Schneider Electric**.
CLICK HERE to read it.



It don't mean a thing if it ain't got that swing!



The [Inside_Networks 2025](#) Charity Golf Day was recently held at the prestigious Hanbury Manor PGA Championship Course – once again bringing the industry together to raise vital funds for Macmillan Cancer Support

 After last year's wet weather, collective fingers were crossed for a dry day and despite forecasts to the contrary, not a drop of rain fell on Hanbury Manor PGA Championship Course during the Inside_Networks 2025 Charity Golf Day. On what was the 20th anniversary of this event, participants enjoyed a fun-filled, entertaining and laughter packed event, which raised £10,000 for Macmillan Cancer Support.

With main sponsorship provided by LMG, Excel Networking Solutions, RS Advisory Services, Onnec, Slice Golf & Events and Molex, 32 teams and 128 people took part. Teams from Netceed, LMG, Edmundson Electrical, Curran IT, RWL Advanced Solutions, Inova, Networks Centre, Splice Group, Allied Telesis, Leviton, Excel Networking Solutions, Mayflex, Bluepoint Technologies, CommScope, Joyce Solutions, Structured Networks Technology, Wesco, Lynchpin Media, RS Advisory Services, 2bm, Data Tech Holdings, Future-tech, Brexons, Onnec, EnerSys, Panduit, Cable Management Supplies (CMS), Molex and Webro gathered to battle it out.

The tightly fought Team Competition saw Team Curran IT 1 emerge victorious on 109 points, with runners-up Team 2bm and Team Wesco on 103 and 102 points respectively. On what was an amazing day for him, the Best Individual award went to Dave Hughes of Team Curran IT 1, while winner of the Netceed sponsored Nearest the Pin competition was Andrew Mason of Team Excel Networking Solutions. This year it was the turn of Stephen Parker of Team Curran IT 1 to take the Netceed sponsored Longest Drive accolade.

PGA golf professional and director of golf for ACE Golf Challenge, Ady Wheatcroft, demonstrated a range of trick shots. He also hosted the Inova sponsored Beat The Pro competition on the 11th tee, where there were 19 winners. In the end, James Sayles of Team Brexons Direct was drawn out of the hat as victor – and that wasn't his only prize. The Inside_Networks Charity Golf Day prize of a golfing gnome is normally awarded to the individual with the lowest score, however, James was presented with this for smashing the slate slab with Ady's club!



Hats off to Molex for sponsoring the 20th anniversary cap

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'Team RWL was proud to support the Inside_Networks 2025 Charity Golf Day at Hanbury Manor. Raising money for Macmillan Cancer Support is the most important part of the event – with three million people in the UK living with cancer, it is critical now more than ever.'

Scott Smith – RWL Advanced Solutions



After a few drinks in the late afternoon sun, attendees enjoyed a three-course dinner, prizegiving, auction and charity raffle. The generosity of sponsors and participants alike was phenomenal and the donated auction prizes saw some fierce bidding with Andrew Stevens, India Culleton, Stuart Lynch, Richard Watson and Gavin McCay all winners.

The Inside_Networks 2025 Charity Golf Day also coincided with the UEFA Europa League final, with Tottenham Hotspur and Manchester United both hoping to salvage something from the season. As many attendees were keen to watch the match a golden goal sweepstake was organised that raised £705 and was won by Ross Higham of Team Mayflex. In the spirit of the day, Ross very kindly donated his £100 winnings back into the pot for Macmillan Cancer Support.

‘The Inside_Networks Charity Golf Day is a highlight of the industry calendar,’ said Rob Shepherd, editor of Inside_Networks.

‘This was an extra special occasion as it was the 20th event and my appreciation goes to Molex for providing a special commemorative cap to mark this impressive milestone and, as always, Mark Cumberworth and Andrew Stevens for making it such a fantastic day.’

Andrew Stevens, CEO at RS Advisory Services, added, ‘A huge thank you to everyone who supported the event again this year. The generosity shown has contributed to the £150,000 total amount we have raised over 20 years for Macmillan Cancer Support.’

Liam DeRoe of Macmillan Cancer Support was in attendance and stated, ‘Right now, more than three million people are living with cancer in the UK. Macmillan Cancer Support is here to help everyone with cancer live life as fully as they can by providing physical, financial and emotional support. As an organisation that is 98 per cent funded by public donations, we are so grateful to those who took part in the Inside_Networks 2025 Charity Golf Day.’

Team Curran IT 1 take a break



The LMG teams line up





Team
Edmundson
Electrical mean
business

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'Joining the event this year for the first time, the Allied Telesis team was greatly impressed. A great location, course and venue combined to make it something we will be looking to rebook for 2026. Shame it couldn't improve our golfing skills though!'

Chris Dyke - Allied Telesis



Team Inova
get set

'The Inside_Networks 2025 Charity Golf Day was a thoroughly well run event, as always. It was great to be a part of a day with Macmillan Cancer Support at its heart and we are very much looking forward to the next one.'

Mike Thompson - Edmundson Electrical



Mark Cumberworth shows off the prizes

'It was another fantastic day at Hanbury Manor, where the Inside_Networks team brought together people from across the industry in a warm, supportive atmosphere – all in aid of Macmillan Cancer Support. It was a privilege to have been able to sponsor the 20th anniversary of this incredible event this year too. Looking forward to next year!'

Mo Boolaky - Molex



Dinner and money raising activities get under way

'Another excellent Inside_Networks Charity Golf Day. It's the one day of the year when everyone in the industry comes together for a fantastic cause.'

Ieuan Rowe - LMG

A big thanks to all the event sponsors:





It's all to play for!



There's nothing shady about
Team Bluepoint Technologies

'There was a brilliant atmosphere with a mix of friendly competition and camaraderie throughout. Most importantly, it was all for a great charity in Macmillan Cancer Support. A huge thanks to everyone involved – see you all next year!'

James Krovina – Cable Management Supplies (CMS)

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Mayflex has been a sponsor of this event for many years and it never fails to deliver a fantastic day. The course, venue and perfect organisation, along with meeting with some great industry colleagues, makes this one of the best golf days in the industry. Long may it continue and well done to everyone involved.'

Sean Girling – Mayflex

Team Leviton were this year's best dressed team



molex

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Slice:
GOLF AND EVENTS

R&M provides connectivity infrastructure for Bosch's new Japanese headquarters

Bosch Japan's new Yokohama headquarters brings together 2,000 employees from eight locations into a nine story, 50,000m² facility. This consolidation enhances cross divisional collaboration, particularly in mobility research and development. The building showcases Bosch's commitment to sustainability, featuring solar panels, rainwater utilisation and an automatic ventilation system. Notably, it's Bosch's first global project employing digital twin technology throughout construction.



The site also includes the Tsuzuki Ward Cultural Center, marking Bosch's inaugural public-private partnership worldwide. R&M provided the comprehensive copper and

fibre optic network infrastructure, meeting all technical specifications and supporting the facility's advanced digital needs. The project partners selected an overall R&M solution for the data network

– the only one that fully met the criteria and specifications – and it's based on R&M's Netscale 72 fibre optic distribution platform and the R&Mfreenet portfolio for LAN infrastructures.

MLL Telecom cements longstanding partnership with Fife Council

Fife Council is the third largest local authority in Scotland and the 11th largest in the UK.

It employs circa 18,000 employees who provide 900 different services to over 365,000 people. In the latest chapter of a 16-year supplier partnership with Fife Council, MLL

Telecom's network services contract has been renewed for a further three and a half years, valued at £7.2m.

As part of the new contract, MLL will continue to evolve and enhance Fife Council's core multiprotocol label switching

(MPLS) network that connects 485 sites including 150 schools. An immediate focus



is the provision of a secure and resilient cloud based connectivity service to support the Transforming Learning initiative, which involves the roll out of around 36,000 Apple iPads to schools. Additionally, MLL will continue to upgrade Fife Council's

MPLS network with the implementation of optical fibre connections to streamline and improve its performance in areas such as health and social care and housing, which will enable adoption of new and innovative technologies.

Applied Digital and ABB accelerate AI-ready data centres

Applied Digital has launched an infrastructure partnership with ABB at the company's greenfield 400MW campus in North Dakota. The collaboration will innovate fast and reliable energy efficient solutions to meet the needs of rapidly advancing artificial intelligence (AI) capabilities.

Central to the partnership is a new medium voltage power architecture using ABB's HiPerGuard medium voltage static uninterruptible power supply (UPS) technology. The partnership covers the complete design and development of



the site's electrical infrastructure, optimised to improve the efficiency and resilience of major AI facilities.

Conventional data centres use low voltage power distribution and UPS systems. Switching to medium voltage for the UPS system and power distribution

enables data centres to scale more efficiently, expanding in 25MW blocks. With fewer parts and cabling, installation is simpler and reliability is higher, while running operations with higher voltages, lower conversion losses and less heat generation supports greater energy efficiency.

PROJECTS & CONTRACTS IN BRIEF

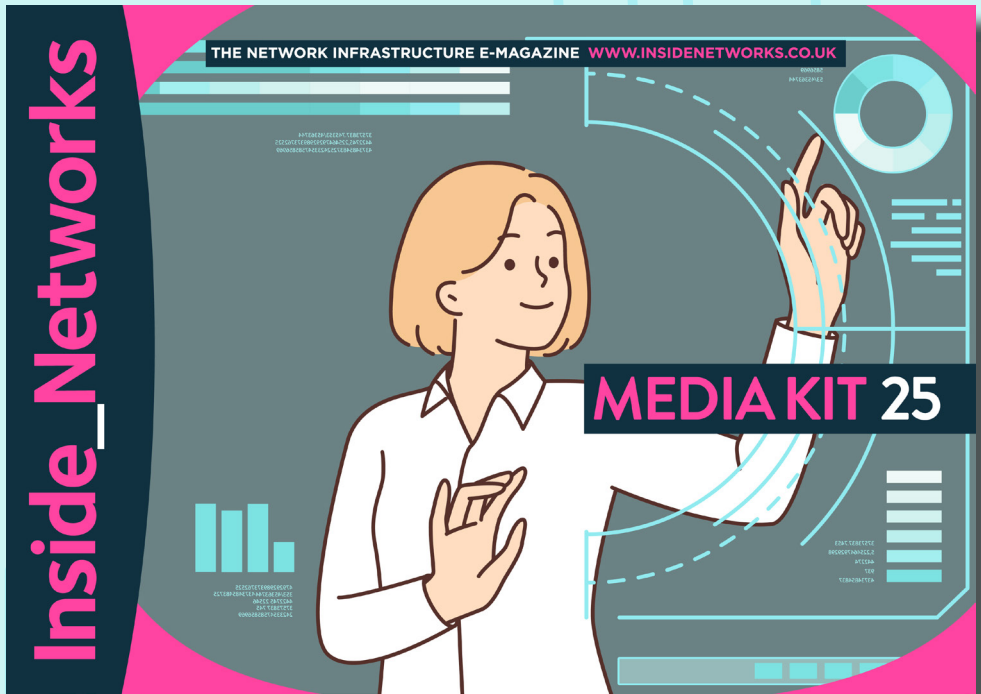
Pulsant has completed the acquisition of two of SCC's data centres in Birmingham and Fareham, expanding its UK edge infrastructure platform, platformEDGE, to 14 sites nationwide. The deal includes the transfer of a high quality roster of colocation clients and operational teams, ensuring long-term continuity and growth. Pulsant and SCC have also formed a strategic partnership to provide critical colocation services across the UK.

Liberty Global has chosen CommScope to upgrade several networks for virtualised distributed access architecture (DAA) operation in Europe.

Saft has been selected to supply a fully integrated lithium-ion battery energy storage system (BESS) to Gurin Energy's project in Japan. The site will provide over 1GWh of storage to help integrate renewables into Japan's grid, balance demand and supply and avoid curtailment.

Nokia has been awarded a new four-year contract extension by Elisa to significantly enhance the capacity, coverage and speed of its network. The deal, which will cover both Estonia and Finland, will prepare Elisa's network for the advanced 5G era supporting ultra-fast speeds and low latency at near instantaneous levels.

All you need to know



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Give me five

Iwona Zalewska of Kingston Technology explains how Gen5 non-volatile memory express (NVMe) solid state drives (SSDs) are revolutionising data centre storage and sustainability



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▶ Data centres are in the news again as the world contemplates how we will power our ever-expanding, AI-driven, digitalised lives. There is, of course, the real question of power – the electrical energy needed to keep data centres running 24/7 – and, alongside this, the unprecedented quantity of data that must be available, processed and stored using the most secure and sustainable practices.

ENERGY FLASH

According to a report from the National Energy Service Operator (NESO), data

centres in the UK currently account for 2.5 per cent of the country's electricity consumption. However, by 2030 this is expected to rise to around six per cent of total electricity consumption.

This is a stark reminder of how much power data centres need – not just to keep servers operating, but for redundant and high performance cooling. In a recent interview, Simon Besteman, director of the Dutch Cloud Community, said, 'Even mid-sized data centres now consume as much energy as small cities, but while they face pressures to perform, they also have to do

so sustainably.’

Data centres can no longer pay lip-service to power efficiency, or transfer responsibility for environmental management on to their customers. Many enterprises have sustainability programmes involving ISO 14001, the certification of which demonstrates a commitment to minimising the impact of all their systems on the environment. Responsibility for sustainability now sits very firmly with the data centre operator – that means looking at every element of the facility to ensure it is cutting energy consumption, managing waste and optimising resource use.

FIVE ALIVE

Storage infrastructure is an important part of this, underpinning performance and enabling secure retention of data, while at the same time lowering energy consumption. It’s an area that has seen huge change in recent years as digitalisation has produced more and more data. Simon Besteman has stated, ‘Storage is the fastest growing segment in IT, and that has to do with volumes of data. Storage now is more decentralised, it must provide access to data faster than previously, and it must ensure data is always available.’

Where previously data centres relied heavily on hard disk drives (HDDs), this form of storage technology has been superseded by the arrival of SSDs and, more recently, with the emergence of Gen5 NVMe SSDs, which mark a pivotal advancement in data centre technology.

These high performance storage devices, built on the PCIe 5.0 interface, not only provide the efficiency, speed and scalability that

today’s rapidly expanding data centres require, but they also deliver improved sustainability. Adoption of these drives is not merely an upgrade in storage capacity, it is a fundamental shift in how data is processed, accessed and stored, and the environmental impact it has in the facility.

EFFICIENCY DRIVE

Gen5 NVMe SSDs have superior efficiency. They offer double the bandwidth of their Gen4 predecessors – up to 32GT/s per lane, effectively delivering up to 128Gb/s in a 16-lane configuration. This drastic increase in throughput significantly reduces data access latency and bottlenecks, allowing data centres to handle large volumes of information with greater agility.

Faster storage access means graphics



processing units (GPUs) and central processing units (CPUs) spend less time waiting for data, which translates into more efficient overall compute performance. As workloads become more data intensive with AI, machine learning, cloud services, real-time analytics, high performance computing (HPC) and edge computing, Gen5 SSDs provide the performance necessary to keep pace.

POWER EFFICIENCY

When it comes to sustainability, Gen5 NVMe SSDs have an important contribution to make. Because they

‘When it comes to sustainability, Gen5 NVMe SSDs have an important contribution to make. Because they process data more quickly and reduce the time systems need to remain active, they inherently lower energy consumption per task.’

process data more quickly and reduce the time systems need to remain active, they inherently lower energy consumption per task. Higher performance means fewer drives are needed to achieve the same throughput, which reduces the total hardware footprint.

Many Gen5 SSDs also incorporate advanced power management features, allowing them to dynamically adjust power use based on demand. These efficiency gains help data centre operators to cut down on cooling requirements and electricity bills – two increasingly acute environmental and financial pain points.

NEED FOR SPEED

The blistering speed of Gen5 SSDs revolutionises how data is handled. With read and write speeds exceeding 13,000Mb/s and 11,000Mb/s respectively, data centres can serve applications with near instant responsiveness. This is crucial for industries requiring real-time data access such as financial trading, e-commerce and video streaming.

Latency sensitive applications benefit immensely from this speed, improving end user experiences and enabling more robust, responsive services. In distributed systems and cloud native environments, where data must travel quickly between



nodes, Gen5 SSDs play a critical role in minimising delay and maintaining consistency.

MATCH POINT

As digital transformation accelerates, data centres must scale seamlessly. Gen5 NVMe SSDs are designed with scalability in mind, supporting denser deployments without sacrificing performance.

Their compatibility with newer server architectures and ability to ensure predictable random I/O performance, as well as predictable latencies over a wide range of server workloads, makes them ideal for flexible, high speed storage networking across large scale environments. As data centres expand, or are built to cope with demands, operators can be confident that Gen5 SSDs can be easily incorporated into their modular, scalable infrastructure.

When thinking about the benefits of SSDs in general, there is another consideration to bear in mind. While data centres target faster access times, lower latency and improved data volume handling, they are also looking for the most cost and power efficient way to use their physical space. SSDs allow greater storage performance per rack, allowing data centres to store and transfer more data whilst also reducing physical footprints over more traditional storage mediums. Potentially less required space decreases the need for cooling per data unit, contributing to lower operating costs, a cut in emissions and improved efficiency.

LOOK AHEAD

Data storage is a fundamental part of data centre operations. As businesses demand faster data access and greener infrastructure, Gen5 NVMe SSDs have

an important role to play, providing the foundation for the future ready data centre – smarter, faster and more sustainable. ■



IWONA ZALEWSKA

Iwona Zalewska is Kingston Technology's regional director for UK & Ireland and concurrently serves as DRAM business manager for EMEA. In her role as regional director, Zalewska oversees sales and marketing efforts across all Kingston product lines, aiming to maximise sales growth. As DRAM business manager, she focuses on driving DRAM sales across EMEA by developing strategic sales initiatives and promotional activities with the support of her team.

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