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March 2018
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Mastering the Edge

Dave Johnson, Executive Vice President, IT Division, Schneider Electric, talks about the year Edge Computing comes of age

Working on the definition and composition of edge data centres

Dave Johnson, Executive Vice President, IT Division, Schneider Electric, talks about the year Edge Computing comes of age

Edge computing and edge data centres have become a major talking point at industrial events. Recent marketing reports forecast the IT systems end of the market to grow from $1.7bn in 2016, to $6.72bn by 2022. However, much of this hardware is set to be installed in facilities which were not designed for the availability requirements of todays' hybrid environments. Part of the challenge is that consensus has not been achieved on what Edge actually comprises.

"In my opinion, the Infrastructure Masons have come up with best definition of Edge," said Dave Johnson, executive vice-president for the IT Division at Schneider Electric. The Infrastructure Masons' credentials are considerable, their numbers exceed 1500 data centre professionals around the globe, representing more than $100bn infrastructure projects in over 130 countries.

According to Smarak Bhuyan, the author of "Can you define the Edge" published on the Infrastructure Masons blog, an Edge location is a computing enclosure, space or data centre which is geographically dispersed to be physically closer to the point of origin of data or a user base. For an Edge to exist, there must be a hub or a core so that dispersion of computing to the periphery would qualify as Edge computing. Consequently, the physical enclosure, space or facility to accommodate the distributed IT resources could be defined as the Edge data centre.

It is expected that soon more than twice as much computing will be done outside of our traditional notion of a data centre, at the Edge, in distributed compute and on devices. "Edge conjures up an image of the facility being a single rack enclosure, a micro data centre, or a prefab or regional facility," continued Dave Johnson. "Edge could be anything from a small facility in a town centre run by a colocation service provider, to a micro data centre in a retail store."

The applications best suited to these types of Edge facilities are, in part, still emerging. However, the Infrastructure Masons see existing use cases including content distribution networks; the requirement for local processing; IoT devices and next generation workloads such as augmented reality, virtual reality, drone footage and autonomous vehicles.

A common thread is keeping both the data and data processing capacity close to the point of use. This may be required for numerous reasons and many of these applications require low latency or high bandwidth to be successful. But in some cases, location could be down to regulatory reasons – such as restricting data from being communicated outside a given jurisdiction. The requirements of GDPR may make the case for Edge facilities compelling.

Driverless vehicles are frequently cited in conjunction with

the former. Life-critical applications simply cannot wait for data to be processed and instructions via some far-off hyperscale data centre. But there are also medical applications and AR/VR applications in the pipeline which will be dependent the Edge. "We'll start to see applications that involve hologram experiences for business or personal use. They need a lot of bandwidth and they need near zero latency – especially if you're talking medical procedures."

There are other more creative examples, said Johnson. "If you look at the opportunity presented by something like Amazon's acquisition of Whole Foods Market. Already we've seen at least one industry pundit suggesting that the company will use its bricks and mortar stores to house Edge or micro data centres. With seven locations in London, it could mean that the capital's population could be streaming Amazon Prime movies from the local grocery store!"

But in terms of infrastructure for Edge, Dave Johnson believes that existing sites like mobile or cell-phone towers would lend themselves very well in terms of location and ubiquity. The introduction of 5G could also propel Edge facility growth, where existing locations will probably need to be retrofitted using prefabricated or micro data centres. However, much infrastructure already exists in places like stairwells, under desks and in network closets. The challenge, as mentioned above, is that much of it was not designed for this sort of purpose.

While on the one hand, organisations have moved many standard and non-critical applications into the cloud, those being kept on premise tend to be of a higher priority and more critical nature. Additionally, many of the emerging applications mentioned here, are simply unsuitable for cloud delivery. The result is that organisations are left managing hybrid infrastructure comprising on-premise and outsourced facilities. A pressing need is to raise the standard of the on-premise data centres, including the way they're managed.

For Schneider Electric, Dave Johnson claims the company has already established itself as a leader in both data centre physical infrastructure and management software: "We're already very good at distributed IT environments, hyperscale or centralised facilities and regional data centres. We're very excited about the idea of being able to provide an end-to-end solution for Edge, from the enclosures, power and cooling, to the management software, monitoring and services. Edge represents a very, very exciting opportunity for us to support our customers across their range of environments."

www.schneider-electric.co.uk/en/work/solutions/for-business/data-centers-and-networks/edge-computing/

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Subscription rates:
UK £191 per year, Overseas £216

Electrical Review is a controlled circulation monthly magazine available free to selected personnel at the publisher's discretion. If you wish to apply for regular free copies then please visit: www.electricalreview.co.uk/register

Electrical Review is published by

2nd floor, 52-54 Gracechurch Street
London EC3V 0EH
020 7933 8999

ISSN 0013-4384 – All editorial contents

Jan-Dec 2016 6,162

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The talk of the data centre world

What will everyone be talking about at the forthcoming Data Centre World event being held at London's Excel exhibition centre on March 21 and 22? From what we hear in our office, many discussions will start off with predictions framed around the greater than expected growth in our data requirement in the next ten years and the huge amounts of power that will be required by this staggering increase in data storage and processing capacity and the detrimental effect to the planet's environment.

Meeting these demands will need upwards of a 20% annual growth in the nation's power generation just to keep the country's light on. But it would appear that the data centre industry is aware of the challenge and steps are in hand to deal with this daunting task and to plan how we minimise the environmental impact from the extra power consumed and the extra cooling required to use this power.

Many of these issues are discussed in the pages of this supplement. Problems facing the operators of universal power supply systems in terms of reliability are outlined on page 26 while matters relating to the alternative methods of efficient cooling and other UPS-centric subjects are described on pages 28 and on.

This extraordinary hike in energy expectation will not be the only discussion point at the show. Another concern which will surely get an airing in the conference area is the General Data Protection Regulation (GDPR) which will come into force of 25th May. These regulations will affect all data users and will apply to any organisation using or supplying data to any EU citizen or business. These discussions will be largely Brexit proof and apply to anyone doing business in Europe

When GDPR takes effect, it will replace the 1995 data protection directive (officially Directive 95/46/EC) of 1995. The regulation was adopted on 27 April 2016 but does not become fully operational until two months after Data Centre World. It becomes enforceable after a two-year transition period and, unlike a directive, it does not require national governments to pass any enabling legislation and is thus directly binding and applicable.

There will be much conference discussion on the subject and it will be interesting to find out what the great and the good feel about the new regulations and the problems they may bring. Let's hope it's a change for the good. And as an old advertising manager of mine once said: 'Never a problem, simply another opportunity!'

The show is previewed on page 12 and the latest news leading up to the event will appear on the Data Centre Review website www.datacentrereview.com. Maybe we'll see you there, the magazine is one of the media sponsors for the event.

Paul Gay
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London data centre campus opened for business

New entrant to the wholesale data centre market brings vital capacity to meet City and London-Stansted-Cambridge technology requirements

Kao Data has announced the opening of Kao London One, the first of four data centres to be built at the company's campus in Harlow. When fully completed, the £200 million campus will support an IT load of over 35MW across 150,000 sq ft of technical space.

As a rare new entrant to the wholesale data centre market, Kao Data has attracted a lot of attention both for its size and level of investment. The campus represents one of the largest developments in the UK and adds substantial capacity and future organic growth opportunities for customers. Kao Data Campus is located in the London-Stansted-Cambridge technology corridor, just 20 miles North of the London Docklands and 30 minutes from Liverpool Street.

Jan Daan Luycks, CEO of Kao Data commented: "The ever-expanding data economy continues to drive the need for IT capacity. Kao London One provides highly resilient capacity and connectivity for national and international businesses. We believe that our strategic location and premium campus solutions offers an exceptional proposition to customers across a wide range of sectors, providing them with significant competitive edge."

The new data centre is opened with a fully operational Technology Suite, providing 2.2MW customer-ready technical space within an 8.8MW Powered Shell. Kao Data Campus offers the latest thinking in terms of design, energy-efficiency and sustainability, and flexible configuration to offer the some of the most advanced facilities available. Key to the Kao design philosophy is reduced complexity in mechanical and electrical system engineering.

David Bloom, chief executive and founder of Goldacre Ventures (now part of the Noé Group), said: "It is has become increasingly rare for new companies to launch into the wholesale data centre market. The barriers to entry are simply too high given the funding requirement and the lack of suitable sites with sufficient owned power, land and connectivity. Kao Data Campus represents an exciting and important resource for the UK data economy. Not only is it backed by some of the world's most astute investors, it also benefits from an experienced and visionary management team."

Tom Phillips, Investment Director at Downing, commented, "Since providing a debt facility to the business in February last year, which has been used to support the construction of the first data centre, we have been impressed with the performance of the Kao team. Completing the build programme to schedule and on budget is reflective of their ability to deliver on what they say they are going to do. We now look forward to the growth of the business and seeing a range of different customers choosing Kao Data as their data centre provider and partner of choice".

With concurrently maintainable site infrastructure, Kao London One is designed to provide 100% uptime. Together with climate control infrastructure utilising Indirect Evaporative Cooling (IEC) Units, the Kao Data Campus provides highly resilient and highly energy efficient operations, with a proven ultra-low PUE below 1.2.

John Keddie, Chairman of the Harlow Enterprise Zone said "We are delighted to see the completion of the first data centre at Kao Park. Not only does this mark a significant milestone in the development of the Enterprise Zone, but it marks the continuation in technological development here following on from the first development of fibre optic technology on the site 50 years ago. Harlow Council has been pleased to have been a partner in the data centre development, supporting the infrastructure delivery, and are excited about the prospect for further growth on the site".

Situated in the London-Stansted-Cambridge technology corridor, the £200m Kao Data Campus provides around 150,000 sq.ft technical space and 35MW power for IT equipment. The site comprises four 8.8MW data centres, each divided into four 2.2MW Technology Suites. Served by a dedicated and redundant 43,5MVA power supply, the quality of the design, construction and systems installation has helped Kao Data achieve BREEAM excellent certification.

The technical capability, hyper-connectivity strategy and secure data resilience of the Kao Data Campus makes it ideally placed to support both cloud and hybrid-cloud solutions for a range of enterprise businesses, including financial services, life sciences, defense and the health sector.

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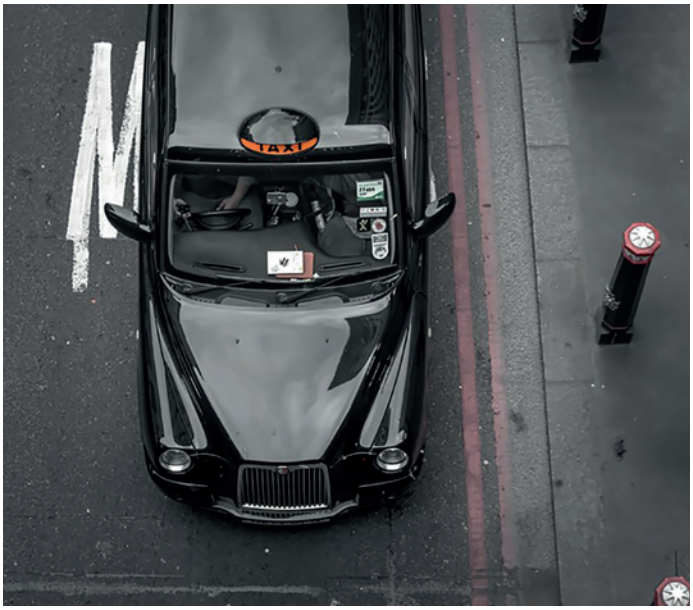
Power on

UK remains a highly valued destination for data centres



According to the quarterly business bulletin Colocation Markets, the UK is becoming the go-to location for data centres in Europe. Investment interest continues to grow and Britain remains one of the largest data centre markets. And although Brexit could strongly influence the decisions of investors to look outside of the UK towards places like Dublin, Amsterdam and Frankfurt, the UK continues to be a highly valued location for data centres. With the Finance and Investment Forum monitoring new opportunities for emerging data centres and ecosystems in the country, it looks set to thrive.

Thanks to modern technology, the physical location of a business is less important than it used to be. These days, clients, consumers and staff can access data no matter where they are. That said, choosing the right place for your data centre remains a priority. Here's why according to property management consultants Bidwells.

There are several factors to consider before setting up a data centre, with location and proximity being two of the most important. Businesses will need easy access to their servers for maintenance or upgrades, while proximity to staff and clients is also crucial. IT staff may need to visit to replace equipment, adjust, or perhaps expand operations. With colocation services, businesses retain ownership of all their hardware and software, therefore it is important to have good transport links to and from the data centre.

As well as a convenient location, data centres require plenty of space in which to operate, especially if clients decide to expand their business. Servers take up space, and if your data centre does not have sufficient space, clients may move their business elsewhere. Another matter for data centre providers to consider is energy consumption. According to NRDC's research, data centres are expected to reach 140 billion kilowatt-hours by 2020. This is equivalent to 50 power plants. That said, many data centres are looking into green energy and renewable resources like solar, wind and tidal power as alternatives to sustain operations. In the long run, alternative energy will not only help the environment but also be more cost-effective. More and more data centres are therefore looking at locations where they can make the best use of these alternative energy sources.

The UK is a thriving area for data centres thanks, in part, to the fact that it is a major digital and technology hub. The demand for data centres in the UK is high, with some of the most popular areas including:

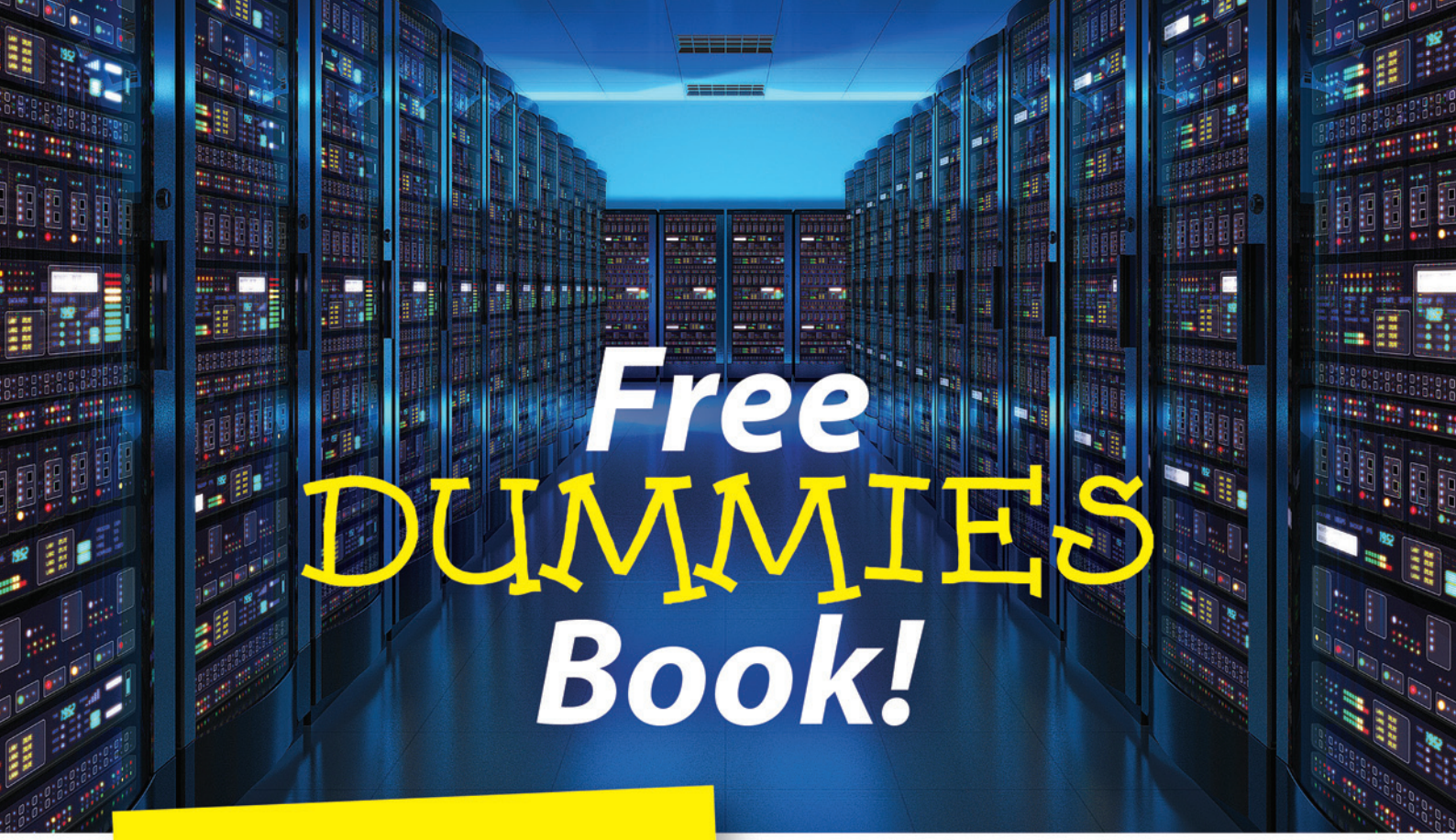
London forms part of the Golden Triangle and leads the pack as the most popular data centre location in the UK. There are 71 data centres in the city – the highest in the UK. There are many reasons for providers setting up data centres in London, with its proximity to digital businesses and excellent transport links being two of the main drivers of demand. What's more, some of the best universities and colleges are situated in London, giving data centres easy access to highly skilled graduates to ensure the highest level of performance and innovation.

Manchester has become something of a technology hub and data centre providers have definitely noted its potential. Manchester is becoming a viable option for data centre operators to set up their businesses, boosted by the government's Tech North start-up initiative in the city. Again, this location also means access to individuals from some of the best universities and IT colleges, while the city's internet speeds are also comparable to the best in the country, which is essential for providing a strong hosting service.

The M4 corridor through Berkshire benefits from a thriving technology community as well as its proximity to London and business parks like Thames Valley Park and Arlington Business Park. Major tech companies have been set up in the Slough and Reading regions, providing easy access to potential clients. And Berkshire is more affordable than central London locations.

While the United States is by far the largest data centre market, the fact that London leads the way and has a well-represented European population is encouraging, paving the way for areas like Manchester and the M4 corridor to follow in its footsteps.

The UK remains one of the largest data centre markets, with the 2017 Colocation Report stating that the country is becoming the go-to location for data centres in Europe. Not withstanding Brexit concerns, the UK continues to be a highly valued location for data centres. With the Finance and Investment Forum monitoring new opportunities for emerging data centres and ecosystems in the country, it looks set to thrive.



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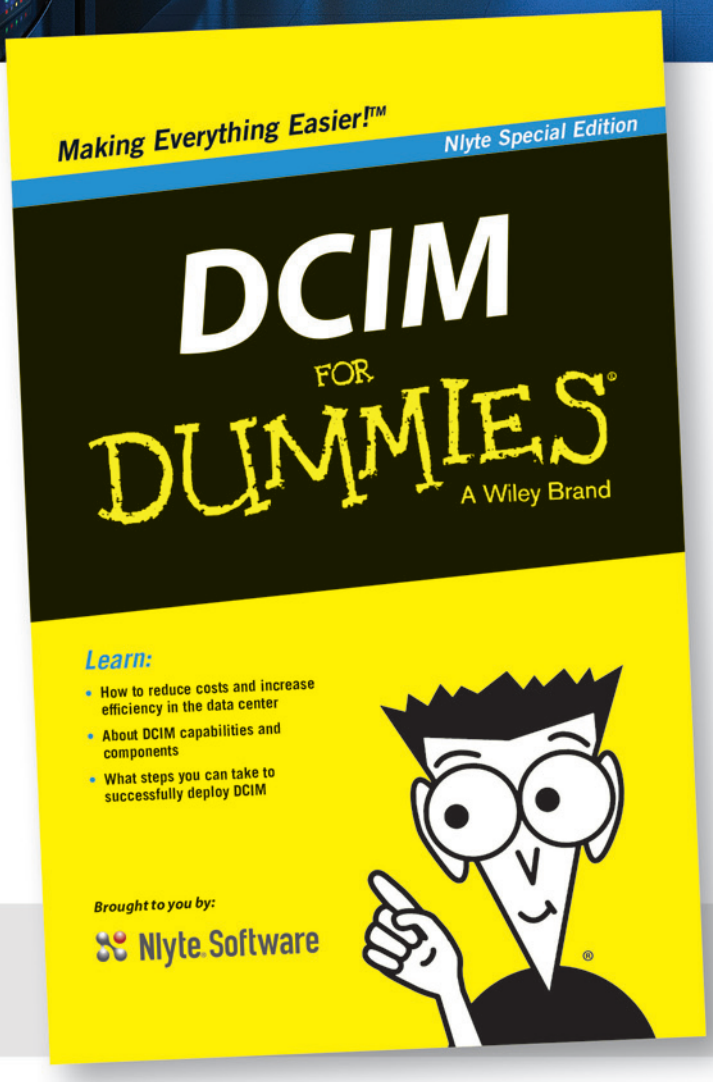

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The rise of modular UPS

Stringent maintenance processes should be the constant factor in an ever-evolving market

The modular uninterruptible power supply (UPS) market is gaining popularity, presenting uncapped opportunity for business. With this upturn Leo Craig, general manager of Riello UPS, advises on the action businesses should be taking to maintain modular UPS units efficiently.

There are many benefits to owning modular UPS solutions. Perhaps most obviously for growing businesses as they can be scaled up in tandem with the demands of a business – removing the risk of oversizing a UPS unnecessarily at the outset.

Other added advantages include the offering of maximum availability, scalability, reliability and serviceability whilst also ensuring high efficiency, low cost of ownership and a high-power density. With this in mind, it is no wonder that the market has been growing in popularity in recent years.

A report published in 2016 by global research body, Frost & Sullivan[1], indicated that the global modular market is expected to grow twice as fast as the traditional UPS market (forecast period 2015 – 2020), with a general acceleration in growth predicted post-2017. This upward trajectory currently shows no signs of abating.

Whilst modular systems can be scaled up to meet increased demand for businesses, data centres can easily switch modules off too, guarding against under-utilisation. The modular UPS also addresses the increasing issue of limited floor space within data centres, something that can cause potential risk.

> **“Any maintenance is typically intrusive into the UPS or switchgear”**

Thanks to factors such as the internet of things, smart devices are fuelling huge demand on data centres and this is only going to increase. So what advice can we give to businesses with a modular unit, to ensure it runs as efficiently as possible and avert any disasters? The trick lies in good maintenance. Here are a few tips below:

MODULAR MAINTENANCE

When it comes to maintenance, modular UPS systems are marginally easier to service and repair in situ than a standalone UPS system because a failed UPS module can be ‘hot-swapped’. The failure or suspect module is then returned to a service centre for investigation. To return a standalone UPS system to active service may require a board swap.

This is an issue that was highlighted in the wake of the UPS-related issues experienced by British Airways in 2017[2], which had disastrous consequences for the business. As this example shows, the way in which maintenance is carried out needs to be carefully considered, whether you choose to implement a modular or centralised UPS system.

Human error is the main cause of problems occurring during maintenance procedures; engineers may throw a wrong switch, or carry out a procedure in the wrong order. But, whilst it might be easy to lay blame solely at the feet of the engineer in these instances, errors of this kind are often the result of poor operational procedures, poor labelling or even poor training. By ironing out these areas right at the start of the UPS installation, risks can be avoided.

For example, if the solution being deployed is a critical system comprising large UPS’s in parallel and a complex switchgear panel, castel interlocks should be incorporated into the design. Castel interlocks force the user to switch in a controlled and safe fashion, but are often left out of the design to save costs at the start of the project. This is a common occurrence and the client could pay dearly in the future if a switching error occurs.

ATTENTION TO DETAIL

Simple things can make a difference. By ensuring that basic labelling and switching schematics are up-to-date, disaster can be averted. Having clearly documented switching procedures available is recommended.

If the site is extremely critical, the procedure of Pilot – Co Pilot (where two engineers both check the procedure before carrying out each action) will prevent most human errors.

EMBRACE TECHNOLOGY

Any maintenance is typically intrusive into the UPS or switchgear, so managing this carefully is vital. Most problems that occur, including the failure of electrical components, are proceeded with an increase in heat. If a connect point isn’t tightened properly, for example, it will start to heat up and eventually fail in some way.

Short of checking every connection physically, the most effective solution is thermal imaging. Thermal image cameras are relatively cost effective and easy to use, making them a worthwhile investment. Thermal image technology can identify potential issues that wouldn’t necessarily be picked up using conventional techniques, without the need of physical intervention.

MONITOR EQUIPMENT AND COMPETENCY

Round-the-clock equipment monitoring also offers robust protection and should be part of the maintenance package, as UPS’s will alarm if any parameter of their operation is wrong – if an increase in heat, a fan failure or a problem with the batteries

is detected, for example. It is highly unlikely that UPS failure will be limited to times when the engineer is carrying out the annual maintenance visit, so constant monitoring is critical.

Rigorous training is also vital and, to protect themselves, clients must ensure that the attending engineer is certified to carry out the work. It is the responsibility of the client to ask the maintenance company for proof of competency levels – pertaining both to the company itself and to the engineers it uses. Risk averse clients should also check 'on the day' that the engineer on site is competent and isn't, for instance, a last-minute sub-contractor sent in because the original engineer is off sick.

READ THE SMALL PRINT

A strong maintenance package should also ensure that when the UPS does fail, the response is timely and effective. Service level agreements need to be appropriate to the criticality of the application. There is no point having a maintenance contract for a UPS 24/7 response if access to the UPS can only be gained during normal business hours. Transversely, if operations are 24/7 and very critical to the business, then 24/7 response is a must.

Caution should be applied wherever maintenance contracts seem too good to be true – can a two-hour response really be guaranteed, for instance? Anyone who drives on the M25 might question this! It is also worth checking exactly what constitutes the 'response' – will it just be a phone call or will it be someone coming to site, and, if so, will that someone be a competent engineer? It's important to pay attention to the guaranteed fix time too as it doesn't matter how quickly an engineer arrives on site if the problem then takes a week to fix because of parts being delayed and so on.

Finally, if the UPS can't be fixed with a certain timescale you need to understand what your course of redress is, for instance - will the UPS be replaced?

Maintenance continues to be a key concern for any business investing in a UPS, both modular or stand-alone. Ease of maintenance is, no doubt, one of the differentiators helping to drive growth in the modular UPS market but, whatever product businesses select, it is essential they apply proper due diligence to their maintenance approach.

Watertight maintenance processes and procedures should be in place and relevant documentation must be easily and readily available. As well as ensuring that switches cannot be thrown by accident, businesses need to check that engineers are competent and should study the SLAs in maintenance agreements. By adding technologies like thermal imaging into the maintenance mix they will help to reduce the likelihood of issues further. Stringent maintenance processes should be the constant factor in an ever-evolving market.

Go to event lives up to its name

Data Centre World is celebrating its tenth anniversary by promising its audience of data centre professionals a bigger and better event than ever before. Described as the go-to event for the data centre market, DCW is returning for its tenth year this March 21-22 at Excel, London. The 2018 edition of the event will feature an array of innovative conference speakers and the most comprehensive supplier exhibition possible in our industry.

Having started in 2008 with just 30 exhibitors, Data Centre World's stature has grown with the industry that it serves. By 2014, just under 10,000 data centre professionals attended the event. In 2017, that had doubled to 19,926. Of that number, 95% said they would come again next year.

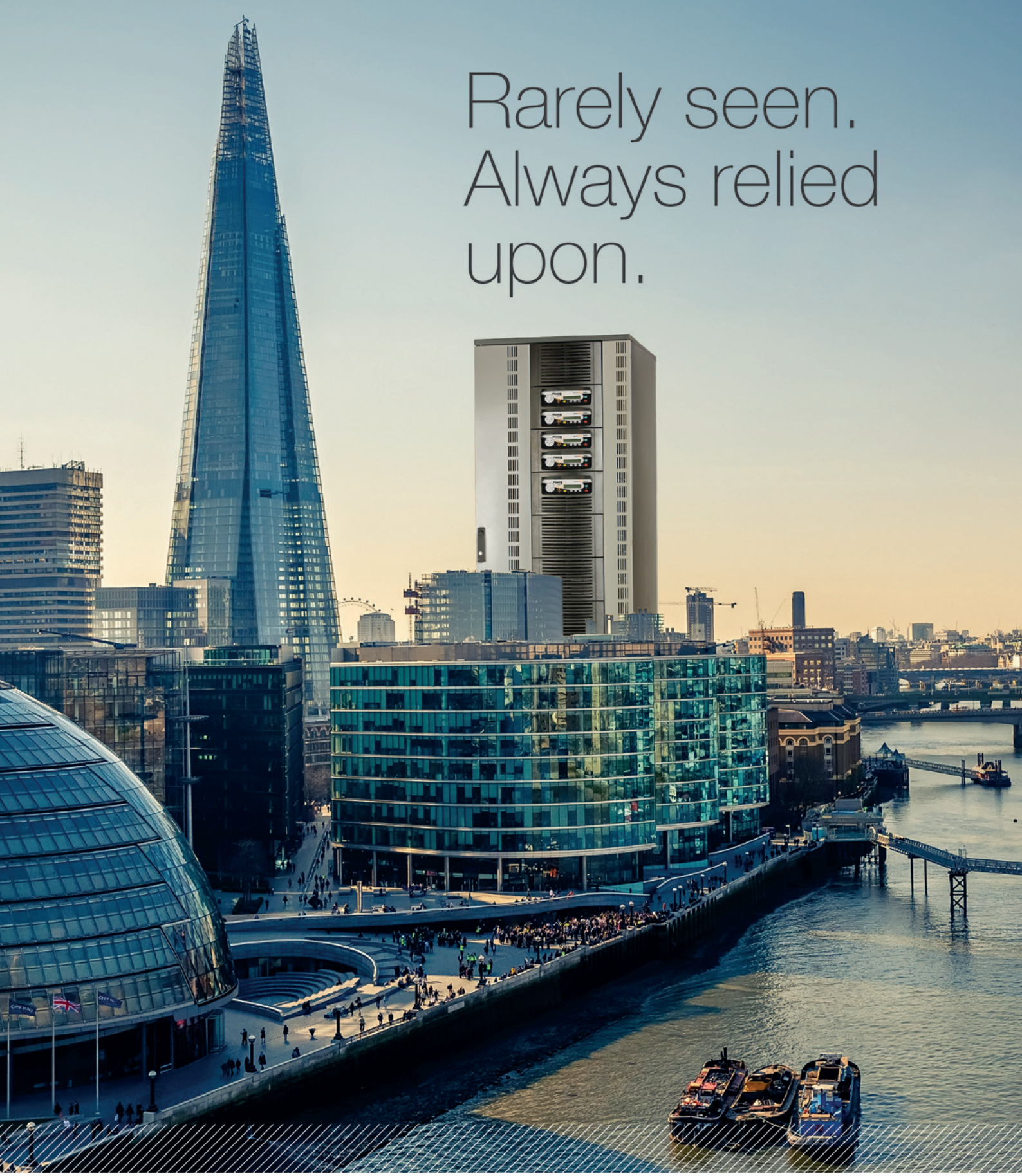
Event attendees can keep up-to-date with the very latest industry trends and network with their peers and competitors in the key product areas: power and energy; security; fire prevention; data centre routing and switching; and robotics automation.

The Data Centre World 2018 conference theatres will play host to 550 world-class speakers from across the technology and data centre landscape. These include Mozan Totani – director and head of data centre development and delivery at Oath, Garry Connolly – president and co-chair of the GDPR Awareness Coalition and Host in Ireland, Jon Summers – scientific leader in data centres at Research Institutes of Sweden and Emma Fryer – associate director at techUK.

Rabinder Aulakh, Event Director for Data Centre World, said: "We're really excited to be organising the event for its tenth year. It's been amazing helping it grow from strength to strength and we know that this year will be a fitting tribute for its decade anniversary.

"Our passion is supporting those in the data centre industry, which is pivotal to so much of the technology that we take for granted. I'm really proud to be able to welcome so many professionals from the industry, as well as our partners and sponsors such as Riello UPS, Huber+Suhner, Eaton, STULZ, Schneider Electric and RF Code, to name but a few," Aulakh explained.

New features of this year's show will include the Diversity and Talent stream, which will encourage discussion around skills shortages and shine a light on the diversity challenges the industry continues to face. Though progress has been ▶



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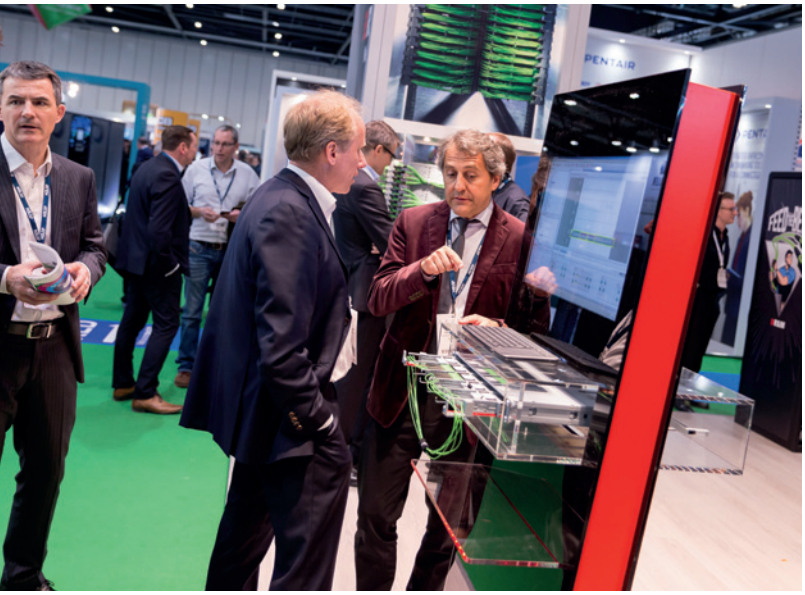

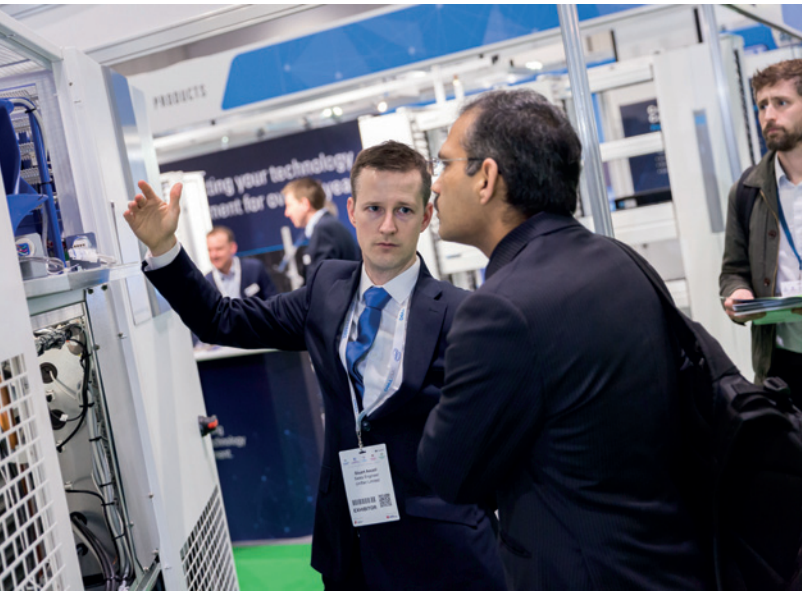

made, there is still a lot of work to be done, and speakers from organisations such as Tech UK, GCHQ, Massive Interactive, CNet Training and Next Tech Girls will discuss how to tackle the issue.

Emma Fryer, from TechUK, praised Data Centre World's leadership in this debate, noting that an encouraging number of women are contributing to the programme content in speaking roles. "This sets a great example and demonstrates that women can and should hold positions of leadership in the sector," she added.

The upcoming General Data Protection Regulations, which come in force this May, mean businesses will have to carry out massive changes in the way they deal with data. The new rules will present both challenges and opportunities, which is why Data Centre World will be hosting a dedicated GDPR stream, including a panel titled GDPR & CCA: The Best Ways to Meet Compliance.

Ten years ago, few could have imagined some of the technology we now take for granted. Machine learning and artificial intelligence may at times seem far-fetched, but businesses are becoming increasingly curious and are starting to invest in these technologies.

A decade on from the inaugural event, Data Centre World will be hosting a specialised stream dealing with the practical applications of machine learning and artificial intelligence in the data centre. More than 500 companies will be exhibiting at the show, including industry leaders such as Stulz, Schneider Electric, Eaton, Huber + Suhner, Legrand and Vertiv.

Leo Craig, general manager at Riello UPS, commented: "For Riello it's a must-attend show. With our everyday reliance on data in our work and home life, it would be foolish for us to not support the biggest data centre event in the UK. The show has got bigger every year and is certainly the go-to event for the data centre industry in the UK."

The one-of-a-kind Live Green Data Centre feature will once again be at the heart of the event, with a working showcase which will illustrate the implementation of cooling units, fans, cables and more. Dunwoody, Starline, TTK, Cellwatch, Excool, Reillo UPS are just some of those already involved.

Alongside a world-class exhibition, the show will offer four theatres, including the Data Centres of the Future Theatre, in which innovative and forward-thinking speakers will push the boundaries with their thought leadership and insights. Other theatres will focus on data centre design & build and physical security, energy efficiency cost management and DCIM, and facilities & critical equipment.

Phil Soar, CEO and Chairman of CloserStill Media, the organiser behind Data Centre World, said: "Our award-winning team have been working hard to make this event the best yet. The show leads the way in the data centre market and it's great to be able to celebrate its tenth anniversary at such an exciting time for the industry."

Delegates who attend Data Centre World are also able to visit the co-located events Cloud Expo Europe, Cloud Security Expo, Smart IoT London and Big Data World. Why not register for your free pass today to be a part of the must-attend events.

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The solutions based approach to UPS investment

The European data centre market is booming but despite its positive growth, it has recently received its fair share of bad press. Data centres are under the spotlight for their 'drain' on power and utilities. Operators are being challenged to deliver facilities that not only offer a seamless and reliable service but that are also environmentally friendly.

Ultimately, the subject of efficiency leads back to total cost of ownership (TCO). A topic that has been discussed at length over recent months. Defining the TCO for a capital investment takes into consideration all environmental market factors, including outlay, maintenance and residual values. Data centre owner/operators now account for more complex physical environments in terms of sophisticated data storage, whilst considering much longer term financial impacts of their investments. More intelligent approaches to initial spending and shrewd attitudes towards forecasting TCO are evident across the industry.

As multifaceted facilities, data centres are made up of a whole host of power hungry equipment from servers and routers through to fire suppression, air conditioning and backup power. With so much energy being drawn from one central source it is important for equipment to work in synergy to achieve best performance. For example, a more efficient Uninterruptible Power Supply (UPS) unit will require less cooling – less cooling means a reduced amount of water used – a win-win.

UPS systems are found at the heart of data centres. They are essential to ensuring reliable clean power, delivering critical power protection against any load disturbances, whilst supporting the overall operational efficiency of sites. Specialists such as Power Control Ltd are helping the data centre industry realise their true potential through expert guidance in selecting not just the correct UPS solution but also the elements that contribute to TCO and make up the complete electrical infrastructure.

When it comes to selecting the right UPS it is essential that resilience remains a top priority. However, the industry cannot and has not shied away from its responsibilities when it comes to operating efficiency. After all, this efficiency does have a visible impact on TCO.

Forward thinking UPS manufacturers pre-empted the industry's latest demands for ultimate resilience without compromising efficiency and have presented technologies that resonate with both. Choosing which technology is the best for a business can be a bit of headache though. It is easy to argue the pros and cons of the various technologies, but this does not make the selection process any more straight forward.

Take solid state UPS for example – these systems have been the root of power protection for many years and where once their efficiencies were poor, advances in technology now mean these models boast ultra-high efficiencies combined with unfailing power protection. The combined reliability and resilience of solid state UPS leaves many with the assurance that they have absolute power protection against data loss with these systems in operation.

One of the major drawbacks to their modular rivals however, is their slightly more complex installation process, which is unavoidable due to the size of the equipment and sophisticated network of cables. General maintenance on solid state UPS systems can also be more convoluted.

It is the evolution of modular UPS that has muddied the waters further when it comes to power protection selection. In recent years the term modular has been making big waves in the UPS industry and offer a flexible and scalable approach when it comes to UPS investment.

A glowing outlook for modular UPS so far but this would not be a fair evaluation without considering resilience. A subject that is very often over simplified to the detriment of the end user. Modular UPS allow for redundancy with spare modules, therefore it is important to ensure that the system is prudently monitored to make sure that there are always spare modules, because if all modules are in use, the redundancy will be lost and this would leave no capacity for backup modules. This simplistic view of the protective nature of modular UPS would make many question how resilient a modular solution can be and if it is worth the risk.

Power Control is urging businesses to approach UPS investment judiciously, by looking at the complete power protection landscape, environmental factors and physical infrastructure. This will deliver a solution that is exactly what a business needs not just now but in the future with a clear TCO outlook.

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Edge data caters for innovative IoT solutions

Companies that employ machine-to-machine communication to streamline manufacturing require real-time capabilities. IT resources deployed in close geographical proximity ensure that latency is low, and data readily available.

Rittal believes that its Edge Data Centre provides an effective answer to this need. It is a turn-key, pre-configured solution based on standardised infrastructure. It can be implemented rapidly and cost-efficiently – paving the way for Industry 4.0 applications.

The sensors and actuators deployed in smart production systems continuously relay information on the status of processes and infrastructure. This forms the basis for innovative services – such as alerts, predictive maintenance, and machine self-optimisation – delivered by the company's IT department in real time. To make this possible, and to respond rapidly to events and anomalies, low latency between production and IT infrastructure is critical.

FAST, SIMPLE AND EFFECTIVE

A remote cloud data centre is unable to support these scenarios. The solution is edge computing, i.e. computing resources at the perimeter of a given network. With this in mind, Rittal has introduced a new edge data centre: an end-to-end product with standardised, preconfigured IT infrastructure.

The Rittal Edge Data Centre comprises two Rittal TS IT racks, plus corresponding modules for climate control, power distribution, UPS, fire suppression, monitoring and secure access. These units are available in various output classes and can be easily combined for rapid deployment. Moreover, to safeguard critical components from heat, dust and dirt in industrial environments, the Rittal Edge Data Center can be implemented in a self-contained high-availability room.

As Clive Partridge, Rittal's Technical Manager for IT Infrastructure, observed: "The Edge Data Center allows organisations quickly and simply to establish IT environments

> "The Edge Data Center allows organisations quickly and simply to establish IT environments equipped for the challenges of what ís been termed the fourth industrial revolution"

equipped for the challenges of what's been termed 'the fourth industrial revolution'. Combined with the as-a-service offering that we jointly provide with iNNOVO Cloud, the Rittal Edge Data Center is a complete, one-stop solution for enterprises of all sizes."

To streamline edge data centre planning, Rittal offers a special web-based configurator (www.rittal.de/configuration-system) which means compact and small enclosures can now be quickly and easily configured online. Customers can choose the right accessories, without reference to a catalogue, then position and prepare the enclosure for mechanical processing.

SELF-MANAGED OR MANAGED SERVICES

Customers who would prefer not to operate the edge data centre themselves can opt for Rittal's data-centre-as-a-service (DCaaS) offering. They are then free to focus on their core tasks while harnessing the benefits of the Internet of Things (IoT) for their business. Hand-in-hand with its IT-as-a-service (ITaaS) platform provider iNNOVO Cloud, Rittal also offers private-cloud data centres in shipping containers, plus ITaaS. The containers are fully equipped with all key active components, such as servers, network connectivity and storage for immediate use.

The Rittal Edge Data Center can be extended two racks at a time. Moreover, the modular approach provides customers with diverse options, allowing it to accommodate a variety of scenarios – for example, installation in an IT security room, or in a container, to be located wherever it is required.

Further information at www.rittal.co.uk and www.friedhelm-loh-group.com or on twitter @rittal_ltd.

Centres combat critical threats... to guard against vital infrastructure downtime

Protecting the continuity of critical national infrastructure (CNI) sites such as data centres, utilities, mass transit and distribution hubs or communications networks is vital for a modern economy. In the case of a fire, it is essential to minimise any disruption and to avoid potential impact on businesses and consumers, as a blaze can spread quickly and totally wipe out network operations with very little warning.

While it's true that data centre downtime is usually caused by glitches due to human error or increasingly cybercrime, it also remains a grim fact that about 6 percent of all data centre infrastructure downtime is caused by fires, which have the capacity to shut down any number of critical operations. And when you consider the magnitude of the heat generated by equipment in a data or telecommunications centre – in a typical data centre, five thousand watts of IT thermal load could require 10,000 watts or more of cooling power – a fire incident becomes a reasonable possibility.

And, as data centre professionals are aware, because of this ratio whereby it takes more power to cool than to heat, major data centre developers in their quest for optimum Power Usage Effectiveness (POE) are, in consequence, turning more and more to locations in areas with favourable cold climates. Such decisions, while aimed at realising cost-effective energy strategies, equally serve to counter the hazard of excessive heat loads, which by burdening data centre electrical circuits become all to readily the source of typical server room fires.

So, clearly – against this background of intensifying vigilance – life safety and asset security critically depend on the correct specification of the fire suppression system because there can be no doubt that devastation by fire is one of the worst types of incidents a data centre may ever have to deal with. Not forgetting the knock-on effects of data loss, even temporarily, that such incidents often inflict, taking sometimes many months to overcome.

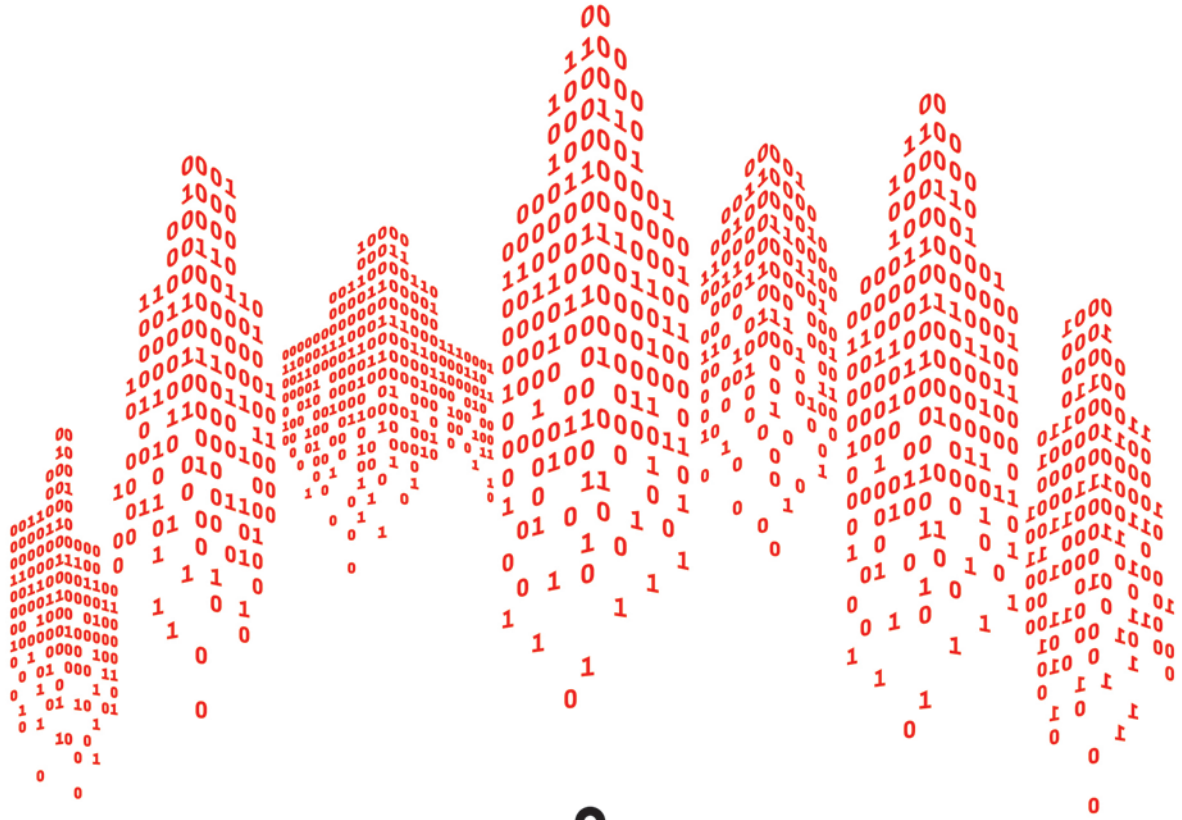
THE PENALTY FOR DOWNTIME

Less than two years ago, thousands of customers were deprived of service for an entire day when a major national telecom data centre caught fire – an incident compounded by the site of the fire being the space used to provide power and connectivity to the centre's IT load.

To add a broader global perspective on nationwide infrastructures: two years earlier, on two continents, electrical fires less than a month apart brought down a range of critical services and lines of communication in two data centres holding national government and municipal records and registries. In each case, these communications nerve centres suffered fires that compromised network equipment and hundreds of major communications servers, creating administrative chaos.

Critically, in one of these cases, repair costs upward of £4million from insurance payouts were exceeded by additional costs of £5million for ongoing restoration of assets.

Such grave incidents stand out as reminders to responsible risk management of the central task of a fire safety system, which – ▶



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at the same time as critically protecting life – is to keep the business functioning, even in the event of a fire, by remedying the situation before it becomes a catastrophe.

REPUTATIONAL' DAMAGE

Fire prevention is one of the most neglected areas of data centre planning, but attitudes may be changing as more IT professionals become aware of the enormous risks posed by fire. According to the latest report on data centre downtime recovery costs, the average cost of unplanned IT downtime is about £600,000. When you consider the penalties for a crippled IT system, they can include the costs of time-consuming manual operation of automated features by extra staff added to the 'reputational damage' to an organisation in terms of brand value and customer loyalty.

Of particular concern is the estimate that 43 percent of businesses forced to close by fire never reopen. The fallout from such catastrophes can be measured by the unplanned downtime for no more than an hour of a global internet commerce and cloud computing business, which cost the company £4 million. A further sobering thought is the calculation, from industry studies, that as many as 93 percent of companies that lose their data centres for 10 days or more, due to a disaster, file for bankruptcy within one year.

The penalties from downtime can be immense, if not insurmountable. Yet, preventative strategies that effectively delivered business continuity after a fire in a serious emergency incident in Denmark could provide answers. In a recent arson attack on a Danish company its IT room and data survived unscathed, thanks to the triggering of a fire suppression system, which flooded the room with a blend of inert gases allowing the servers and network to continue as normal within an hour.

The extinguishing effect of inert gases is achieved by displacing the oxygen in the air. Assets are protected by the slow response that is typical of inert gases. In this case, nitrogen is not poisonous and is particularly well-suited for protecting highly frequented areas, while argon and carbon dioxide, which is heavier than the surrounding air, pervades the ground-level flood-area quickly and thoroughly making it more suitable for less frequented areas.

> **If you can't protect it, don't connect it**

VENDOR NEUTRAL

The extinguishing gases CO2, nitrogen and argon, referred to as inert gases, are colourless, non-conductive and do not leave residues. They are slow to react and do not usually result in any chemical interactions with the fire or other materials. These pure gases, which are available in our natural environment and are recommended for use in extinguishing systems, are derived largely from the air we breathe and if released do not adversely affect the environment. For procurement they have the advantage being vendor neutral and are readily available worldwide; with the choice of fire suppressant technology being driven by the category of risk protected and to meet increasingly stringent environmental and insurance criteria.

This technology is specified in environments where system continuity is critical, and fire prevention management of the highest reliability is essential, as most fires cannot be sustained with less than 15 percent Oxygen; a phenomenon of physics central to the development of inert gas automatic fire extinguishing systems.

The significant advance in digital addressable fire alarm systems means contractors and system integrators can apply the superior benefits of the technology to more solutions. Supported by high integrity fire data comms, such systems fulfil compliance criteria for traceability by their precise pinpointing of an addressable detector's ID for both status interrogation and service and maintenance audits. Critically, these advances allow users to effectively troubleshoot the system for breaches while benefitting from analytics that permit the planning of ▶

COMPREHENSIVE SET OF INPUTS

A recognised exemplar of the concept of configurability is the latest Syncro XT+ addressable multi-area extinguishant control panel from Kentec. Fully approved to EN12094-1, EN54-2 and EN54-4, the XT+ provides addressable detection over 1 or 2 loops with 16 Zone LED Indicators and is available with up to four extinguishant release control units built in.

The extinguishant control modules on the panel have a comprehensive set of inputs and outputs to monitor and control the extinguishing system whether it be gas, aerosol or another. Being configurable via a simple programming interface means that the panel can be programmed to meet the clientsí specific requirements.

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environmental improvements that can reduce the lifecycle costs of the system.

Of course, behind these vital preventative actions lies the first line of defence configured by the network constructor whose duty, when laying the foundations of the system's firewall, is to implement strategic security safeguards calculated to serve all stages of the life cycle of an intelligent BMS (Building Management System) . . . safeguards that not only insure against potential risk to life by rogue systems but forestall operational malfunctions and fiscal loss.

DEFEATING THE HACKTIVISTS

So, crucially, when engaged on a system's installation or its expansion with new devices, developers should observe the first golden rule of good practice: recognize that new products may have minimal security credentials to allow for easy system setup yet these default credentials, if not changed immediately, could be compromised by a cyber attack. Retention of factory-set passwords such as admin or user can be an open door for hacktivists bent on unauthorised access.

System integrators are storing up future problems unless default security parameters such as keys and passwords are changed before the system is launched. Strict management of system users' confidentiality should ensure only complex multi-type passwords with more than 10 characters are assigned. Establish site security policies to ensure unique password credentials are adopted for each site. Avoid credentials shared among a group of users as traceability and accountability can be negated.

It's thought that over 6 million new devices are connected to the internet every day, and very soon the number of devices with internet-enabled connectivity will outpace the population of the planet. This means some 4 billion internet users will be processing and storing billions of gigabytes of sensitive data each day – anywhere, anytime – each byte a digital prey for scammers.

No wonder, then, that new challenges and threats arising from IP (Internet Protocol) Convergence are likely to be foremost in the security concerns system developers must now confront. This is particularly true of fire detection and life safety systems, when IT-enabled convergence can permit, for example, the closer integration of devices such as smoke detectors and sprinkler indicators or lift alarms into a common interface for management control and monitoring throughout an entire building and its remote sites. Developers, therefore, be warned: 'If you can't protect it, don't connect it.'

Such cautionary advice is echoed by informed commentators on the digital age's new vulnerabilities, graphically exposed by the recent global ransom-ware cyber-attacks, which led to network meltdown. 'There are more sophisticated cyber-threats out there than WannaCry,' warns one prominent national spokesman, highlighting the administrative shortcomings of his government's departments whose firewalls abysmally failed, 'so they need to get their act together to ensure they are better protected against future attacks."

In short, risk management is urged to review cyber-security standards of all those critical elements of national infrastructure whose remote access capabilities are under threat: facilities, systems, sites, property, information, people, networks and processes; more specifically IT operations such as 24/7 electronic data processing areas, telecommunications, internet co-location sites, logistics control areas, production machinery, broadcasting or CNI installations supporting essential archive resources, whose integrity taken as a whole designedly requires protection at all times.

Or else . . . the penalties for ignoring such routine risk audits can be the loss or compromise of critical data gathering which could result in a major detrimental impact on the availability, delivery or integrity of essential services, leading to severe economic or social consequences or, in the worst case, to loss of life.

SCALABLE CONTROL SYSTEMS

Central to combating present-day critical threats to data centre integrity is the fundamental concept of 'responsive adaptability' in control panel system functionality that's boosted by advanced ergonomic operations of interfaces that are simple and straightforward to understand for installers, commissioning engineers and end users alike. In addition, extensive easy-to-set-up configuration options reduce ergonomic risk factors and allow the programming of the system to be extensively modified with clarity at every step along the development-path. Such adaptability permits the flexible configuration of panels according to the needs of each interface, with the capability to match specific supervisory structures . . . for example, from the restricted entry-level user, through facilities management, to the maintenance engineer. DCR

A CRITICAL NATIONAL INFRASTRUCTURE EXTINGUISHANT CASE STUDY: BERGENÍS NEW AIRPORT TERMINAL

A new life safety system based around Kentecís Syncro XT+ addressable extinguishing control panel technology is installed in the new 4 billion Kroner (Euro 407m) terminal at Norwayís Bergen Flesland International Airport.

Bergen Fleslandís new terminal will treble the airportís capacity and will include a new dedicated train line connecting Flesland to Bergen city centre. The terminal building itself will be scalable, featuring all core functions, including check-in, baggage, storage systems, security control, and departure and arrival halls on two separate levels.

Norwegian Brannslokkesystemer AS was commissioned to design and install a Novec 1230 extinguishing system, controlled by a Kentec Syncro XT+ network comprising 11 multi-area addressable extinguishant control panels with loop powered status indicator units and using Apollo communications protocol. Brannslokkesystemer AS imports, designs and assembles automatic gas extinguishing systems for the marine and land-based market throughout Norway.

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The other aspect of UPS reliability

A UPS can operate safely and reliably for over 15 years – but only if it is professionally serviced as well as properly designed. Alan Luscombe explains why servicing is critical to UPS reliability

IT or data centre users who purchase a UPS realise the importance of buying a product from a reputable supplier that's good-quality and correctly specified for its supported load. However, while buyers expend great effort on this purchasing decision, sometimes less thought is given – initially at least – to selecting an appropriate service plan. UPS Ltd encourages users to reconsider this, as in their experience a well-specified professional service contract is as vital to the UPS's reliability as the quality of its design and components.

Below, we show the reasons for this by looking at likely sources of UPS failure, and at how the right service plan can prevent these potential risks and their threat to UPS uptime.

RISKS AND HOW TO MEET THEM

Bad batteries are responsible for typically 20% of UPS failures. Premature failures can be disastrously unexpected, if users have been relying on manufacturer estimates of battery life. These are often based on a steady operating temperature of 20°C and zero working cycles. However, real-world operation involves both cycling and running at elevated temperatures. Battery life is typically reduced by 50% for every 10°C rise in operating temperature.

While finite battery life is inevitable, the right maintenance procedures can prevent it from causing a UPS failure. A battery self-test should be run every 30 – 60 days, with a more specialist test every six months, as well as impedance testing. Batteries should be renewed after 80% of their theoretical life, and a monitoring system should be deployed to catch any unexpected problems early.

Other components that can cause UPS failures include electrolytic capacitors and fans. Capacitors age and can fail unexpectedly before reaching their service life, and fans can overheat and fail as well. Failure of either component often and undesirably drives the UPS into bypass; these problems, however, can be prevented by visual inspection during preventative maintenance, and by replacing the components well before the end of their service life.

Other causes of failure include lightning damage, vibration, blocked air filters causing overheating, input power filters causing cable and choke overheating, and contact failures due to deposit build-up.

Firmware upgrades incorporating the latest operational enhancements can help to optimise performance.

EFFECTIVE SERVICE PLANS

An effective service plan should comprise annual scheduled preventative maintenance (PM) visits for both the UPS and its batteries, as well as facilities for emergency call-outs on demand. Trained engineers and technicians should be available 24/7, and based close enough to ensure arrival on site within contractually-agreed response times. This personnel should be backed with immediate access to a comprehensive local spare parts inventory, and more in-depth technical support if required.

Interested parties should be able to pre-empt UPS problems as far as possible through battery monitoring and impedance testing, remote monitoring with monthly trend reporting, and 24/7 alarm notifications.

The service plans must be well-managed, both to ensure their efficacy, and to maintain accurate budgetary control. Tasks include maintaining accurate monthly service records, and replacement planning with time and budget considerations. Fulfilling recommended part replacement cycles, once agreed, is important.

Good management also depends on profiling a service contract to each installation's particular circumstances; the type and size of the load, and how business-critical it is. Is 24/7 coverage needed for 365 days a year? Also, should parts and labour be included, or treated as chargeable extras? In practice, battery and capacitor parts and labour are typically excluded.

The ideal number of scheduled preventative maintenance visits per year depends on the power system topology; single phase installations can be safely supported with a single annual PM visit, while three-phase systems warrant two annual visits. PM visit times – during or outside normal working hours, or at weekends – should be specified, while guaranteed response time frames should be established. Popular choices include 4hr, 6hr, 8hr, End of Next Working Day or Next Day.

In UPS' experience, 70% of its customers choose a fully comprehensive 24/7 service contract with a guaranteed six hours' emergency response. UPS parts and labour, apart from batteries and capacitors, are included, together with two preventative maintenance visits per year scheduled during normal working hours. DCR

Alan Luscombe is director at Uninterruptible Power Supplies, a Kohler company

The tide is turning for liquid cooling

Companies are increasingly moving their operations to the cloud, it's clear that we are going to continue to need more, and bigger, data centres for the foreseeable future. In 2018, it is predicted that there will be a 21% annual increase in data centre construction. Additionally, the Edge offers many opportunities for medium and smaller scale data centres to be delivered to the buildings and locations in which they are most needed to maximise speed, protect data sovereignty and manage critical applications that can't be in the cloud. Small, or large, change is coming

The great news of growth brings challenges in our built environment, in managing growth, in accommodating new technologies which are driving the need for more GPU driven processing; adding to complexity and heat loads in data centres. There are also environmental downsides. We all know that statistics in electricity consumption but when you add water into that the industry will be challenged. We will become a target for activists and campaigners.

With their latest release, Sheffield based liquid cooling developer, Iceotope claims it has the answer. The company's KU:L Sistem combines the energy efficiency of immersion cooling with the ease of use, familiarity and scalability of current air-cooled technology to give you the world's first 1U immersion cooled server.

Backed by Schneider Electric, the company has seen the technology capable of delivering substantial Capex and TCO benefits, it is their first product release aimed squarely at the scale data centre market, be it cloud, enterprise or Edge.

Despite its history and association with gamers and hobbyists, liquid cooling is increasingly recognised by data centre professionals as the technology that will enable current growth trends to keep pace with our demands. Unlike other liquid cooling techniques whereby either all of the heat generating electronics are immersed in coolant, generally some form of ▶

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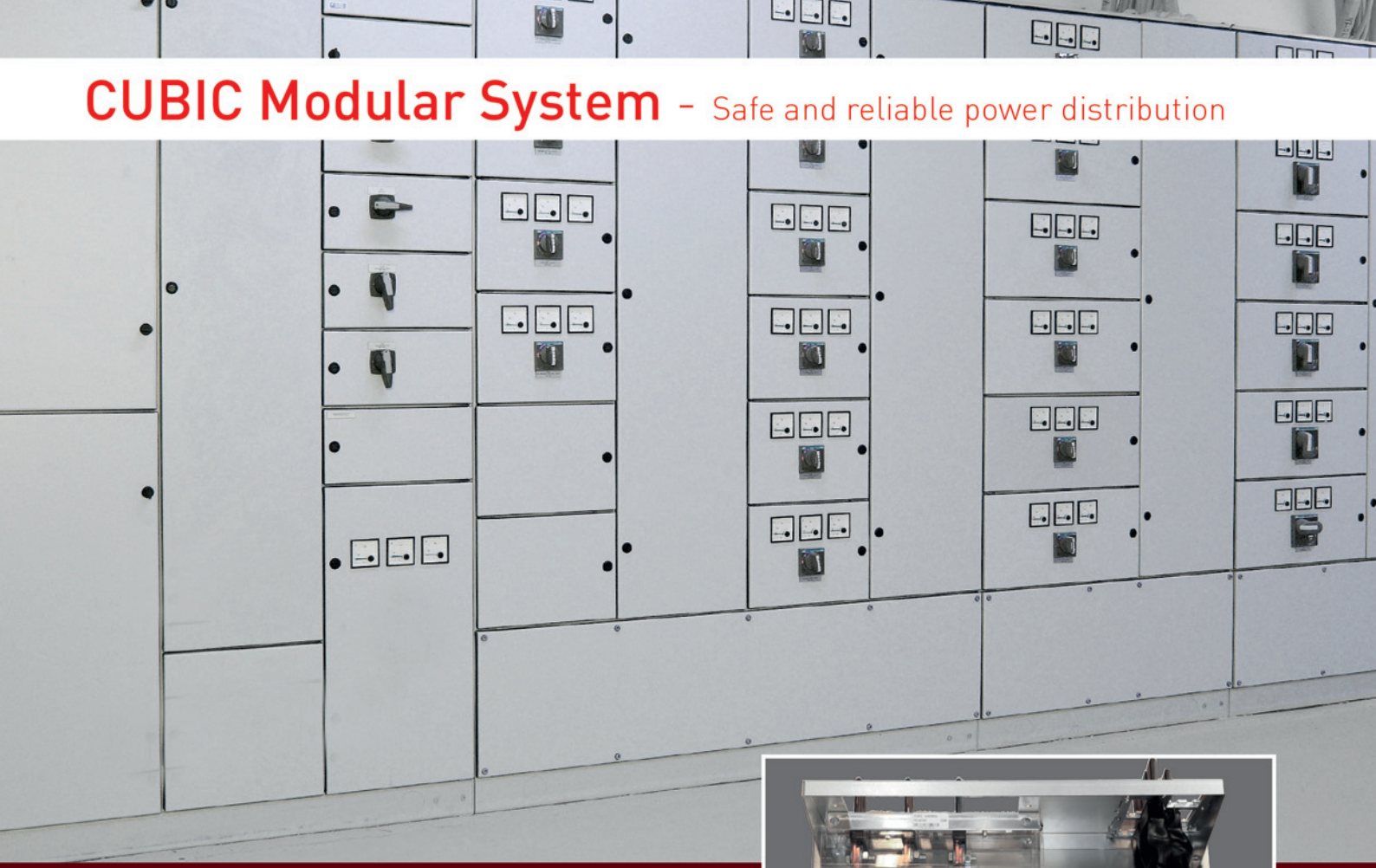

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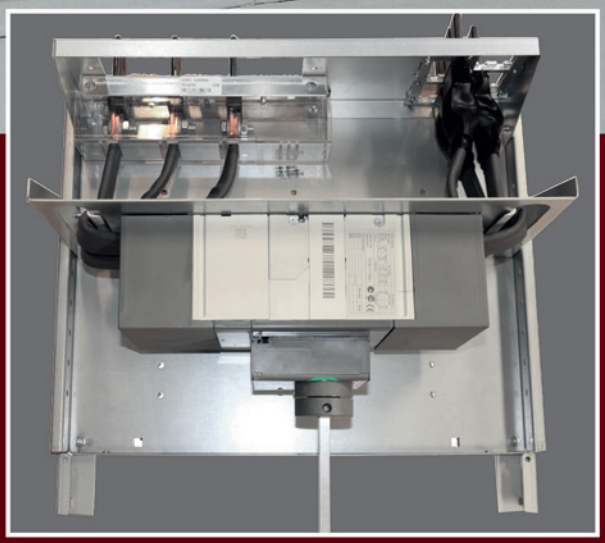

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mineral oil or using cold plates (both of which have severe limitations in the data centre), Iceotope has developed a technology using a primary coolant which is an inert, dielectric, fluorinated fluid. This coolant is Factory Mutual approved, non-flammable, non-toxic and non-corrosive. It is not subject to phase change or evaporation.

> **Tide is clearly turning in favour of liquid cooling**

KU:L Sistem's form factor can be retrofitted into any existing rack and work alongside existing air-cooled kit. After installation into the rack, the server is connected via a manifold to facility water to allow heat transfer and recapture. This is great if you were looking to test out liquid cooling without redesigning your whole data centre but even better for those looking to invest in new data centres. Aside from a connection to facility water, the system requires none of the additional infrastructure and complexity encountered in air-cooled environments: no hot and cold aisle containment, no lowered floors or raised ceilings, no air-filtration, no air-conditioning; and Iceotope can turn any hot, dusty room into a fully-fledged datacentre. This means that not only does this technology save on operational expense, it can also cut the capital outlay required for a new data centre.

In terms of density, Iceotope can deploy 43.2Kw of IT in a 42U rack with no need to leave spaces for air to flow. Additionally, racks can be deployed back-to-back to make best use of all available space. Another key advantage, one that will be of interest to anybody that has had to spend a day or two wearing ear defenders to protect themselves from the deafening noise of fans and air-conditioning, is the noise, or lack thereof, produced by KU:L Sistem. The servers operate in virtual silence even when under heavy load. As well as being great for cutting down the decibel level inside a data centre, the lack of noise means they are also suited to Edge deployments in remote offices and comms rooms.

Iceotope claims its system is able to reduce both capital and operational expenditure, save space and energy and deliver the density and scalability required by modern data centres. While air-cooling hasn't quite taken its last breath, the tide is clearly turning in favour of liquid cooling. DCP

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How Animal Logic grew their movie-making power with a prefabricated data center

Bringing characters to life for the silver screen

With over 25 years experience, independent Australian company Animal Logic has been at the forefront of creating digital content, award winning visual effects and animation for the film and television industries.

The studio recently delivered work on Guardians of the Galaxy Vol. 2 (2017), Alien: Covenant (2017), The LEGO® Batman Movie (2017), The Great Wall (2016), and The Master: A LEGO® Ninjago Short (2016). Animal Logic is currently in production on The LEGO® Ninjago Movie (2017), Peter Rabbit (2018), and The LEGO® Movie Sequel (2019). Other film credits include: The LEGO® Movie, Avengers: Age of Ultron, The Great Gatsby, Legend of the Guardians: The Owls of Ga'Hoole, 300, and Happy Feet.

Animal Logic Entertainment (ALE), is the development and production arm tasked with establishing a strong slate of innovative, commercially minded, story driven projects stamped with the visual and technical innovation that has become the hallmark of the studios' work.

Most recently, Animal Logic Entertainment announced a joint venture with Imagine Entertainment to develop, produce, and finance 6 feature length animation and hybrid animation projects over the next 5 years.

Animal Logic is one of the world's most highly regarded digital production studios with locations in Sydney, Los Angeles and Vancouver — leading to a larger need under pressing industry demand — for the perfect data center.

Data needs and deployment speeds

Alex Timbs, Head of IT at Animal Logic, explains the Animation studio's growth challenge: "Because our business is cyclical in nature, the demands of the productions we're working on dictate how many people we have working for us, and how much infrastructure we need. So, speed of deployment for our data center environments is absolutely critical to our success."

Alex provides perspective on the need for high-density data capacity: "Around 90% of the data center houses high-density compute, which is used for the process of rendering images … the other 10% is high-capacity storage used for production, which houses the images that are generated by that render process."

Animal Logic prides itself on dreaming big for the big screen and as a result their data center solution needed to be equally as ambitious. Alex says he chose a Schneider Electric prefabricated data center solution because it allows for customization, has a reputation for flexible engineering, and promises fast deployment.

Goal

Align data center infrastructure strategy to meet business needs.

Approach

Deployment of a modular scalable data center architecture based on Schneider Electric's customizable prefabricated data center solution.

Story

Increasing demands of high performance computing resources. Business impact of latency bandwidth costs and security and increased data sovereignty demands forcing Animal Logic to come up with an alternative solution.

Results

- Animal Logic experienced a massive boost in animation productivity; the direct result of deploying a render farm with an average operations speed of 1.25 petaflops per second for their most common workloads, all within a 30 kW per rack power density.
- The on-premise system is more reliable than their prior one, removing creative "bottlenecks," reducing latency, and reducing their utility bill.
- With our services supporting the present and future of Animal Logic's data center, they're operating in peak condition.

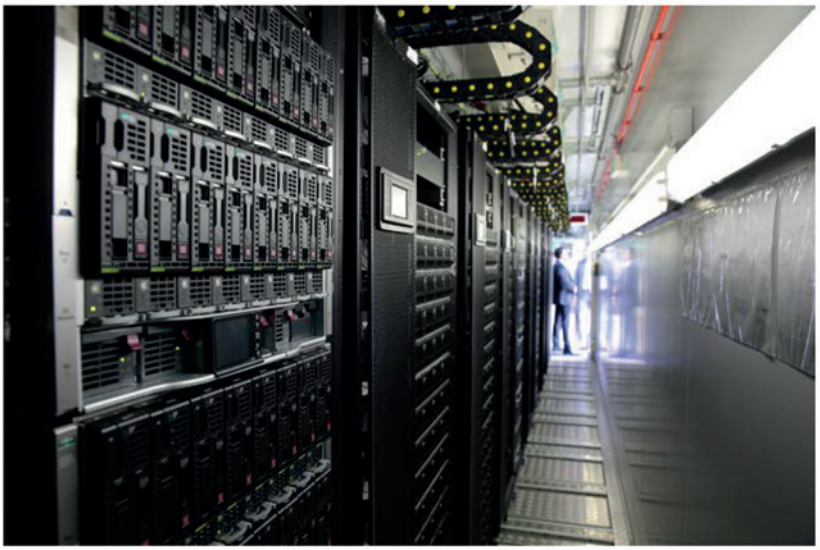
The new state of Animal Logic's data capacity

Understanding Animal Logic's unique needs for capacity and delivery, Schneider deployed a custom prefab DC in just under four and a half months. The new infrastructure delivered a major boost in data processing, which in turn enabled greater performance and operational agility.

For example, the newly implemented 30 kW per rack power density empowers Animal Logic's facility to process 1.25 petaflops per second on average — exactly the depth of capability the graphics house required for advanced animation production and design.

Alex said, "We selected a high-density Schneider prefab for the purposes of meeting the new business requirements. We needed an extremely high capacity, highly dense solution. We selected Schneider Electric based on their engineering capabilities and ability to meet the businesses needs quickly."

Furthermore, a data center infrastructure management (DCIM) software was deployed to provide complete visibility across the facility, improving planning and operational performance. StruxureOn™, a cloud-based monitoring service offers Animal Logic maximum protection of critical equipment. It features 24/7 remote monitoring, remote troubleshooting,



and data-driven insights that provide visibility and live metrics — right to their smartphones.

A partnership secured

Within four and a half months, Animal Logic's prefabricated data center arrived. They soon began experiencing the returns from investing in a Schneider Electric™ prefabricated data center as their compute capability quickly grew and business-risky latency shrank. The prefab unit will continue to power the studio's movie-making magic. "Schneider was the only vendor to be able to deliver in that four and a half months, and has very rapidly become what we call a partner in creating these fantastic images that you see on screen," says Alex, "Schneider Electric is our partner in making movies."

Animal Logic Sydney is currently in production on LEGO Ninjago (2017) and Peter Rabbit (2018) while its Vancouver studio is currently working on The LEGO Movie Sequel (2019). Keep an eye out for their continuing contribution in Hollywood animation.

For more on Animal Logic's work and persona, click these:

http://animallogic.com

http://www.animallogic.com/About

"We selected Schneider Electric based on their engineering capabilities and ability to meet the businesses needs quickly."

— Alex Timbs, Head of IT at Animal Logic

LEADING-EDGE UPS AT DATA CENTRE WORLD

Centiel, the UK subsidiary of Swiss-based UPS manufacturer, Centiel SA, will exhibit its UPS solutions at Data Centre World to be held at Excel in London, 21-22 March on stand: D1035. Centiel will, for the first time in the UK, demonstrate: CumulusPowerM its three-phase, modular UPS system which offers class leading "9 nines" system availability and very low total cost of ownership plus: PremiumTowerTM, a three phase standalone UPS for critical loads of between 10kW and 60kW.

Michael Brooks, managing director of Centiel confirmed: "Availability continues to be the major concern for data centre managers and those working in other environments requiring clean, continuous power. Unlike traditional multi-module systems, the CumulusPower technology combines a unique Intelligent Module Technology (IMT), with a fault-tolerant parallel Distributed Active Redundant Architecture (DARA), to offer industry leading availability of 99.9999999%.

Centiel • 01420 82031
www.centiel.co.uk

DUAL CHEMICAL BATTERY SYSTEM DEBUTS AT SHOW

Yuasa will put on a powerful display at this year's Data Centre World by showing a dual chemical battery system, which utilises both Lithium-ion and valve regulated Lead acid (VRLA) battery technology. The system has been developed to offer the low cost and recyclability of VRLA together with the higher efficiency and operational flexibility of li-ion. It allows lower capital cost UPS systems to be installed with lower operating costs and reduced electricity consumption.

Yuasa UK • 01793 833555
www.yuasa.co.uk

COOLING UNITS CLAIMED MOST EFFICIENT

Rittal's Blue e+ cooling units are claimed as the most efficient of their kind on the market. Independent tests have shown they are 75 per cent more energy efficient than previous cooling solutions. And on the back of this success, the company is extending the Blue e+ range with an output class as low as 1.6 kW, extending the existing range of between 2 to 6kW.

Blue e+ units will be on the Rittal stand (D720) at Drives and Controls 2018.

Rittal • 01709 704000
www.rittal.co.uk

MEDIUM-VOLTAGE DRIVES OFFER SENSORLESS VECTOR CONTROL

Users in heavy industries have a new motor control option for compressors, pumps and fans. Allen-Bradley PowerFlex 6000 medium-voltage AC drives from Rockwell Automation offer expanded, user-friendly control for variable and constant torque applications. The latest release delivers a wider voltage range (2.4 to 11 kV) and provides 100 percent starting torque, using sensorless vector control.

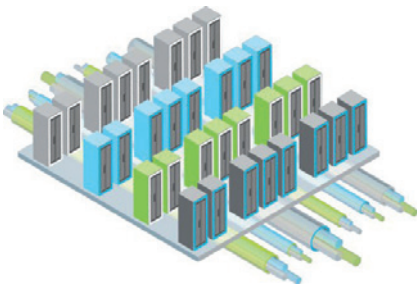
The drive is easy to commission, use and maintain, with standard faceplates and EtherNet/IP connectivity. It is claimed to be a cost-effective solution for heavy industries with higher power needs for their applications.

Rockwell Automation • 0870 241 1803
www.rockwellautomation.com

ANALYTICS MODULE MEETS US FEDERAL REQUIREMENTS

Leading data centre infrastructure management (DCIM) software firm, Nlyte Software has released an analytics module, a new addition to the Nlyte DCOI solution which enables US federal agencies to share and roll-up key DCOI metrics to parent agencies.

Nlyte claims to be the first DCIM solution provider to offer a comprehensive product for meeting all the requirements of the US Federal DCOI. After securely aggregating the vital metrics, agencies will be able to roll-up the reporting chain all the way to the US Office of Management and Budget without exposing the operations of each federal agency to outside organisations.



Nlyte Software • 0208 8777222
www.nlyte.com

FUTURE PROOF CABLING DEPLOYED IN CITY

UK-based startup IP House is a supplier of high-performance data centre colocation services and has partnered with cabling company HellermannTyton to deploy its RapidNet hybrid cabling system throughout the IP House London facility.

Located on the edge of the city's financial district and close to Canary Wharf, IP House aims to serve customers in the finance, gaming and online gambling industries, who's businesses depend on high availability, high performance and ultra-reliable colocation services delivered in accordance with ambitious and strictly observed Service Level Agreements (SLAs). The decision to partner with a leading supplier of cabling and network infrastructure solutions is intended to future proof the data centre and deliver resilient, low-latency services to customers, a company statement suggested.

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www.ip-house.co.uk

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