

# networking

FIXED & WIRELESS NETWORKS FOR ENTERPRISE USERS

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# SAINTS aims to use space data to solve real-world problems

A new programme has been launched to use data gathered from satellites and Earth-based sensors to help resolve some of society's big challenges.

The Situational Awareness Information National Technology Service (SAINTS) will bring together experts from business, universities and the public sector who will use AI to combine travel, business and satellite data to come up with solutions to some of the country's most pressing problems, traffic congestion to border security issues.

It's been launched by the North East Satellite Applications Centre of Excellence which is operated by regional economic development organisation Business Durham. It will be supported by the Satellite Applications Catapult and the UK Space Agency, as well as advanced manufacturing supply chain

specialists and global centres of academic and industry excellence in areas such as space instrumentation, sensors, printable electronics, smart data, GPS, amongst others.

Together, the organisations will offer: innovation and incubation support to turn opportunities into commercial markets for new technologies and applications; skills development and outreach; and inspiration to attract partners and investment from government, business and academia.

Those behind the programme believe situational awareness enables organisations to have the power to respond quickly, such as deploying emergency services to the right critical places during major incidents, or following patterns of behaviour that might predict threats, like a terror attack.

Austen Atkinson, CEO of technology



Representatives from the companies and organisations involved in the programme.

Clockwise from left: Catherine Johns, Business Durham; Andrew MacPherson, 3DEO; Ralph Dinsley, NORSS; Michael McCabe, Intelligence Fusion; Austen Atkinson and Amy Nelson, Lexicon; and Shannon O'Neill, Satellite Applications Catapult.

glue', holding high technologies together."

Satellite Applications Catapult CEO Stuart Martin adds: "We have only just scratched the surface of the information satellites can provide, especially when they are combined with new technologies like AI."

Other companies involved in SAINTS include Intelligence Fusion which helps security companies and global businesses manage risk; NORSS, which helps track and monitor satellites; and 3DEO, which combines Earth observation, Big Data and 3D interactive visualisation to provide solutions to a wide range of industries. ■

agency Lexicon Group, says: "The scope for the data harnessed from satellites is huge. We live in a massive data world but there's no one really processing all this data for the UK, pulling it together, and using it to help us all. SAINTS will be our 'data-

## IT teams leave staff to install their own security updates

More than a third of IT teams leave it up to individual employees to install updates on their work devices and machines, according to Kollektive.

For its *State of Software Distribution* report, the content delivery specialist surveyed 260 IT managers, leaders and decision makers in the UK and US. It reveals that bandwidth issues and poor IT infrastructure have resulted in a number of large enterprises relying on individual employees to keep their systems up-to-date and secure.

The research found that 66 per cent of IT teams are not yet able to automate the distribution of updates, while 34 per cent of large enterprises say that they struggle to distribute updates over their networks. Kollektive believes this issue could be solved through the use of an SDN. However, its report says only 18 per cent of IT managers see the adoption of this technology as a priority before 2020.

The study also highlights the potential security risks involved in leaving individual employees to install updates – 35 per cent of IT managers say they don't trust employees to run updates, and 37 per cent list 'failure to install updates' as their biggest security threat in 2018.

Kollektive blames this culture of manual updating on the broader issues of poor network infrastructure and ineffective software distribution.

"The idea that companies with thousands, or even tens of thousands, of computer terminals are still leaving it up to their employees to manually download and install updates is extremely concerning," says CEO Dan Vetras. "Unfortunately, with so many companies still running on old network infrastructure, many IT departments simply don't have the bandwidth needed to distribute these updates at scale and ensure that they are installed by the entire organisation." ■

myUTN-80



myUTN-800



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## Dongleservers by SEH

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# USB devices “significant threat” to industry

Removable USB media devices such as flash drives pose a significant and intentional cyber security threat to a wide array of industrial process control networks, according to Honeywell.

In what it says is the “first-of-its-kind” research, Honeywell used its *Secure Media Exchange* technology to scan and control USB devices at 50 customer locations. It showed that of the locations, nearly 44 per cent detected and blocked at least one file with a security issue. It also revealed that 26 per cent of the detected threats were capable of “significant” disruption by causing operators to lose



**Of the 50 industrial locations studied, Honeywell found that nearly half faced threats from removable USB media devices.**

visibility or control of their operations.

Honeywell says the threats ranged in severity and targeted a wide variety of industrial sites, including refineries, chemical plants and pulp-and-paper manufacturers worldwide. About one-in-six targeted industrial control systems or IoT devices.

Among the threats detected were high-profile, well-known issues such as *TRITON* and *Mirai*, as well as variants of *Stuxnet*, an attack type previously leveraged by nation-states to disrupt industrial operations. In comparative tests, up to 11 per cent of the threats discovered were not reliably detected by more traditional anti-malware technology.

“The data showed much more serious threats than we expected, and taken together, the results indicate that a number of these threats were targeted and intentional,” says Eric Knapp, director of strategic innovation, Honeywell Industrial Cyber Security. “Customers already know these threats exist, but many believe they aren’t the targets of these high-profile attacks. This data shows otherwise, and underscores the need for advanced systems to detect these threats.”

Honeywell recommends that operators combine people training, process changes, and technical solutions to reduce the risk of USB threats across industrial facilities. ■

## EE launches connected car service

EE, part of the BT group, has launched its first connected cars service for the UK’s five million SMEs who may rely on a fleet of vehicles to run their business.

The mobile operator reckons *Auto Mate* gives businesses more control over their vehicles by tracking their location, performance and driving patterns.

The service works by simply plugging a compact device into a compatible vehicle. This collects a “vast array” of telematics and diagnostics data. This information is then interpreted by a Big Data platform and relayed back to the driver or fleet manager via the *Auto Mate* app or an online portal.

The company claims that as well as reducing fleet running costs, the service also boosts productivity and safety. For

example, data relating to the vehicle’s speed and braking patterns are fed back to the driver and their manager.

Furthermore, if the built-in sensors detect that the vehicle has been involved in an accident, the service will automatically alert the fleet manager.

“*Auto Mate* forms part of our plan to create faster, safer, smarter businesses, underpinned by the Internet of Things,” says Chris Sims, MD of strategy, marketing and digital at BT Enterprise. “We believe that companies such as couriers, hauliers, estate agents, plumbers and electricians will find the service really appealing.”

The service currently costs £11 per month, per vehicle, with a £49 up-front charge, as part of a 24 month offer. ■

## Aruba and Siemens form new partnership for integrated networks

Hewlett Packard Enterprise subsidiary Aruba and Siemens are teaming-up in an effort to bridge what they describe as the operational technology (OT) and IT worlds.

According to the partners, digitalisation, ‘Industry 4.0’, and the IIoT are raising new challenges because data now has to traverse the boundary separating OT and IT. They reckon deterministic, industrial OT networks are not typically coupled tightly with enterprise IT networks, and this results in gaps in data and device visibility, application assurance, availability, and security.

The companies believe that while cyber security and trustworthy data are top priorities in the IT world, plant availability and manufacturing output targets are most important in OT.

Aruba and Siemens claim they can bridge this divide using their “deep and complementary expertise” in OT and IT. By providing integrated networks with tested interoperability and documented in validated reference designs, the two companies say they help ensure that integrated OT/IT systems can be installed rapidly with ease, operated more securely,

**Siemens’ Klaus Helmrich claims the partnership means customers will benefit from future-proof and integrated communication networks.**



and supported more efficiently.

The solutions include wired and wireless networking products and related software that can be implemented via several channels including each company’s partner networks with direct access to their engineering and support experts.

Klaus Helmrich, member of the management board at Siemens, says: “The cooperation between Siemens and Aruba is an important step to complement our industrial networks offering, which is one of the pillars of the ‘Digital Enterprise’, with the additional IT offering from Aruba. Customers will benefit from future-proof, integrated communication networks ensuring availability and security.” ■

## Council uses data analysis to improve services

South Kesteven District Council (SKDC) is said to have become the UK’s first to adopt a form of analytics technology that saves money, identifies service improvements, and has the potential to generate revenue.

The new data analytics system uses software developed by Panintelligence which allows the most up to date information to be utilised for service departments across the council. This supports the teams in their work and enables the organisation to gain a better understanding of the data it already has.

The system was introduced earlier this year and initial estimates suggest it could unlock internal resources and generate capacity, which in turn could save the authority £44,000 annually.

Panintelligence says the software has already “significantly improved” customer services processes. By identifying trends in enquiries, it has enabled the council to tailor rotas for quicker and more effective customer responses and identify enquiries that take longer and why.

SKDC plans to roll out the technology

across its services, from homelessness prevention and rent arrears, to housing repairs and lettings. The software is also being used by the revenue and benefits and planning departments.

SKDC deputy leader Kelham Cooke says: “This predictive modelling capability will, for instance, enable us to identify where people are most likely to fall into debt and intervene early, hopefully catching the problem before it turns into a vicious cycle, and ultimately help us keep that person in their home.”

“We can also create additional revenue by reducing our operational costs, which translates into more and better services.”

Cooke adds that by identifying trends in housing repairs, the council can improve customer service by tackling problems before they happen. “For example, we can identify whether certain types of boilers are prone to faults and fix them quickly, and reduce overspending and repeat property visits by ensuring vans are stocked with the right parts the first-time round.” ■



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Modern networks need to be optimized and flexible enough to handle the needs for ever-increasing bandwidth. At the same time, network complexity is increasing, and the number of devices connected to the network is growing. This report takes a look at the advantages and the growing role of SD-WAN and offers advice on creating a reliable SD-WAN with Out-of-Band (OOB) management.

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## THE WORLD ACCORDING TO...

Dr. Greg Law, CTO, Undo

### Patching software in a networked world is not enough: why flaky tests should not be ignored

It is not uncommon that vulnerabilities are found once software is shipped. For example in September, Cisco reported it had exposed 13 vulnerabilities in its *IOS* and *IOS XE* switch and router operating software, and said this should be patched within weeks.

Network and router technology companies such as Cisco need to demonstrate a rapid evolution in innovation driven by the build out of 5G, the drive toward lowering capex with white boxes, lowering opex with automation, and growing rates of data consumption driven by new IoT devices, big data and AI, and ever more apps. They need to deliver on the big promises.

To do so, the answer so far has been to ship more and faster. But all too often, this leaves even the most touted 'secure' devices vulnerable to attacks of various kinds. Such defects could cost both Cisco and its customers orders of magnitude more to characterise and fix in a live network compared to being detected and fixed in development.

All of the Cisco vulnerabilities found were given a high impact security rating. No matter what we do, not all bugs will be fixed before software ships. However, the more bugs that

can be caught earlier, the better. In so doing, the ability to record a failure or misbehaviour 'in the act', and replay the software execution that led up to the issue to understand the root cause of the defect, is invaluable. This enables engineers to truly understand the nature of any intermittent failures, both during testing and in production, and so better ensure software reliability.

This is most pertinent now. Cisco announced in March that it is to separate its underlying router and switch software from the hardware that hosts it. The move is designed to help the company meet growing demand for virtual network platforms from both hyper scale cloud providers such as AWS, Google and Microsoft, and the demand to support commodity white box hardware, driven by the world's largest telecoms carriers.

As Cisco innovates to stay relevant within these markets, it will need to ensure that the foundation on which these technologies are built is constructed with software reliability in mind, and that when defects and vulnerabilities are found they can be solved and patched more quickly than in the past.

## Bentley claims world first with high-speed in-car Wi-Fi

Bentley reckons *Advanced Connectivity* is the world's first superfast and secure in-car Wi-Fi system.

The new service will be available for all models in 2019. It's claimed users will benefit from uninterrupted mobile network coverage while travelling, "significant" virtual office applications such as *Skype for Business*, the ability to access and edit files on the go, hold video conferences, conduct multiple meetings, etc.

Customers will be able to access *Advanced Connectivity* via a smartphone app. The system will also allow passengers to access entertainment and business applications simultaneously, including uninterrupted HD video streaming across multiple devices.

*Advanced Connectivity* has been designed as a multi-channel VPN that can aggregate up to three mobile network operators on a single superfast signal, even whilst the vehicle is travelling at speed.

The connectivity system is placed discreetly inside the boot lid, with the



ViaSat is providing the VPN connectivity system for Bentley's cars such as the Mulsanne Executive shown which also includes two iPads with keyboards.

Wi-Fi router connected to the on-board DC power supply. The router links to a broadband hub located at a static site. This hub then links the Bentley system to the broadband connection at the host site. Global communications company Viasat provided the technology for Bentley's in-car Wi-Fi system. Viasat is said to be known for managing a network of 14 million Wi-Fi hotspots in around 30 countries, and for bringing satellite-enabled in-flight Wi-Fi on-board commercial and government aircraft. ■

## Spectra Logic claims world's largest data storage machine

Spectra Logic has integrated what is being described as the industry's "most advanced" tape technology, the IBM *TS1160*, in its enterprise-class tape libraries.

The vendor's *TFinity ExaScale*, *T950*, *T950v* and *T380* libraries will support the new tape drive and media. When fully populated with the *TS1160*, Spectra says its *TFinity ExaScale* will store and allow access to more than 2EB (2,000 petabytes) of data. The vendor claims this makes the *TFinity ExaScale* the largest single data storage machine in the world.

Spectra adds that the *TS1160* tape drive and media provides a number of technological breakthroughs over the *TS1155*. It says storage capacity is expanded to an "unprecedented" 20TB per cartridge (uncompressed), data throughput is increased to 400MB per second (uncompressed), and it delivers twice the Fibre Channel interface speed at 16Gbps or up to 25Gbps Ethernet.

Spectra CEO Nathan Thompson says: "To achieve this level of technological advancement, a new custom ASIC chip was developed by IBM; one that will be used in future generations of TS and LTO enterprise tape technologies, including



As well as the *TFinity* library, Spectra's *T* series will also support the *TS1160* tape drives and media.

LTO-9. Ongoing engineering feats such as these underscore the value and longevity of tape technology."

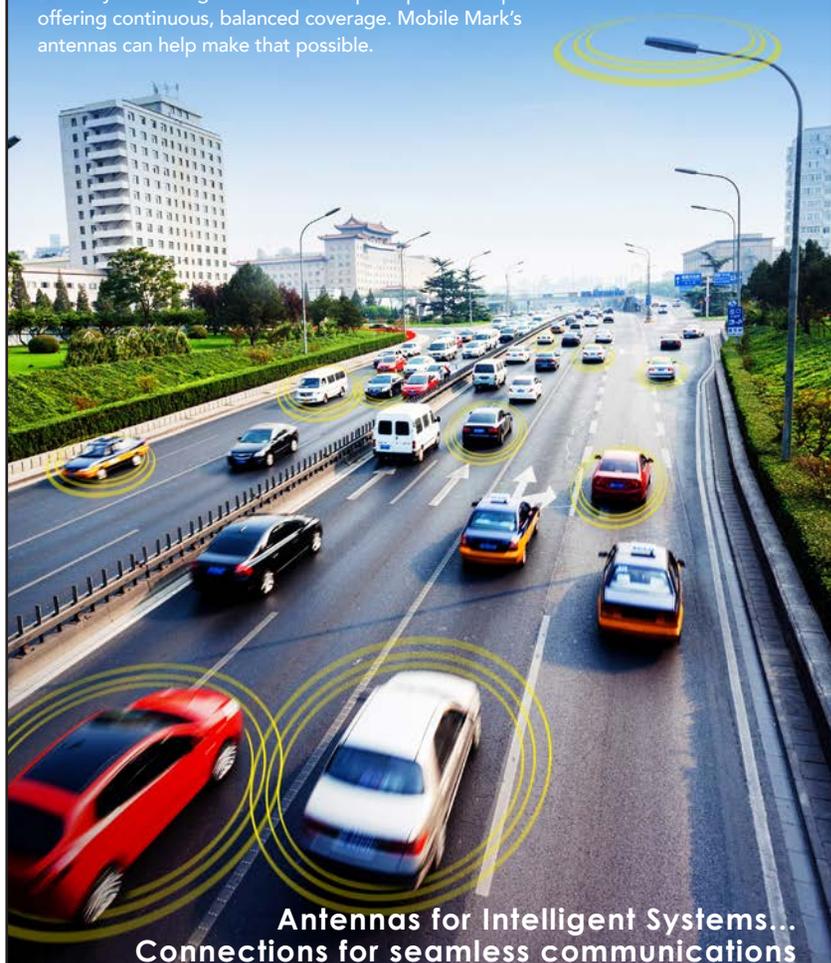
The company continues by saying that the upcoming JE tape cartridge which works with the *TS1160* is engineered with aligned Barium Ferrite (BaFe) particles that provide better signal-to-noise ratios, enabling a native storage capacity of 20TB per cartridge.

Furthermore, the same advanced Tunnelling Magneto-Resistive (TMR) head used to achieve higher capacities and speeds in the *TS1155* and LTO-8 drives are also being used for the *TS1160*. Spectra adds that the new tape offerings are designed to read and write media formatted by the *TS1155* and *TS1150* drives and read tapes formatted by drives older than two generations. ■



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## Oracle to buy Talari

Talari has entered into an agreement to be acquired by Oracle. Talari says its *Failsafe* SD-WAN technology and solutions will become part of Oracle's Communications Global Business Unit. The unit offers Oracle's session border controller and network management infrastructure to secure and manage the flow of session data across fixed and mobile IP networks. Talari says Oracle's "scale, brand awareness and geographic reach" will enable it to invest more rapidly to deliver SD-WAN innovation to its growing customer base. It adds that Oracle is committed to protecting and enhancing customer investments in Talari's SD-WAN solutions, and that there will be no changes to the way it is doing business with its existing customers. ■

## "Affordable" and ultrafast broadband for small businesses

Data centre operator Next Generation Data (NGD) is helping deliver ultrafast 10Gbps broadband connectivity to more than 4,000 underserved small businesses in South Wales and Southwest England. It is partnering with Nextgenaccess to enable a new 80km high capacity fibre route, connecting Bristol directly to NGD's Newport-based data centre. The initiative, which includes a 4km fibre section spanning the Severn Bridge, will make the new ultrafast service available to businesses from early next year. Nextgenaccess recently received £22m of investment from the National Digital Infrastructure Fund which it will use to accelerate scale deployment of its independent ultrafast network across the UK. ■

## Volta partners with Megaport

Carrier-neutral data centre provider, Volta, has teamed-up with global 'Network-as-a-Service' specialist Megaport. The partnership will see Volta provide space within its central London facility for Megaport to offer its cloud and SDN solutions to enterprise and carrier tenants. Volta says its customers will benefit from secure and scalable connectivity to Megaport's major cloud service providers and ecosystem which includes more than 300 service providers. It adds that customers can provision capacity to key service providers around the globe, "on demand and rapidly" through Megaport's intuitive self-serve portal. Volta's central London location was a major influence in bringing together the two companies. ■

# WNDUK IoT network now covers over 50 million

IoT service provider WNDUK claims it has achieved a key milestone in the UK with 1,000 base stations now installed.

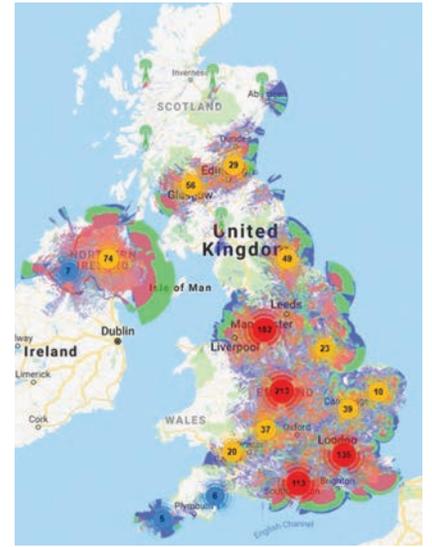
The company is the UK's sole operator of Sigfox's dedicated low-power WAN (LPWAN) communications service for the IoT. Since launching in March 2017, WNDUK says it now provides coverage to more than 78 per cent of the population.

CEO Tim Harris says: "Our network has grown at an unprecedented rate since March. It's by far the largest, and the only viable and credible, nationwide [LPWAN] in the UK. We will continue to enhance coverage and complete the network rollout in the coming months, with 2,000 base stations reaching

95 per cent of the nation's population."

WNDUK is also working closely with Digital Catapult which is promoting development and the early adoption of advanced digital technology. Joint projects include the siting of more than 100 Sigfox base stations in London, across the South Coast, North East England and Northern Ireland.

France-based Sigfox claims to be the world's leading IoT service provider thanks to its global network that connects billions of devices to the internet while consuming as little energy as possible. The network is currently present in 53 countries and Sigfox says it is on track to cover 60 by the end of the year. ■



**WNDUK says its network of base stations currently connects more than three quarters of the UK population.**

## E8 accelerates performance for genomic workloads at Queen Mary University



Queen Mary University of London (QMUL) is using E8 Storage's *E8-D24* array to underpin its genomic workflow and significantly increase performance.

With the newly updated high-performance cluster supporting both researchers and students, E8 says the university will be able to leverage the benefits of the industry's first shared non-volatile memory express (NVMe) storage solution to optimise its data intensive workloads.

Tom King, QMUL's assistant director for research and IT services, says: "Performance and data optimisation are essential to the work behind genomic processing, and E8 Storage overcomes the traditional storage constraints with its first-to-market shared NVMe storage platform."

According to E8, the shared NVMe platform enables QMUL's research teams to accelerate the performance of the fast-tier scratch space behind a distributed file system

to support genomic sequencing. The high performance and capacity of E8's NVMe-over-Fabrics system will be used for both data and metadata, enabling the university to push more jobs through the cluster at a faster rate.

The storage system is integrated with IBM Spectrum Scale and also combined Mellanox InfiniBand. Gilad Shainer, marketing VP at Mellanox, says: "Connecting the shared NVMe storage with high speed InfiniBand network is an ideal design for genomic applications." ■

## Boston to upgrade Wi-Fi for AGS Airports

AGS Airports Ltd. has awarded Boston Networks a contract to upgrade the Wi-Fi infrastructure at Aberdeen, Glasgow and Southampton Airports.

AGS is said to be the UK's second largest airport group. With its current network nearing end of life, and as part of its ongoing investment programme, the company will work with Boston on the design and upgrade of its current wireless infrastructure.

Boston will implement a centrally managed solution capable of supporting all corporate, third party and guest services, as well as the next-generation of Wi-Fi technologies and smart devices.

The firm will upgrade the WLANs at each airport using Aruba's latest *OS8* technology. It's claimed this delivers an always-on

network with built in features such as seamless roaming, load-balancing, and hitless failover. According to Boston, this makes *Aruba OS8* the "ideal solution" to deliver the



**The upgraded WLANs will provide high-speed connectivity to more than 13,000 employees and the 15m passengers that travel through Aberdeen, Glasgow (pictured) and Southampton Airports each year.**

performance, user experience and security required to support an airport environment.

The company adds that the first phase will commence with "rigorous" site surveys. These will be designed to ensure optimum coverage in both location and density throughout the terminal buildings, as well as to standalone buildings across the airport complexes.

Once live, the upgraded infrastructure will provide high-speed connectivity to over 1,000 AGS employees, 12,000 staff from other organisations working across the three airports, and a combined 15m passengers each year.

The roll out is scheduled for completion by December 2018, and will be supported by Boston's network operations centre to ensure the seamless delivery of Wi-Fi connectivity across the airports. ■

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- For all common operating systems
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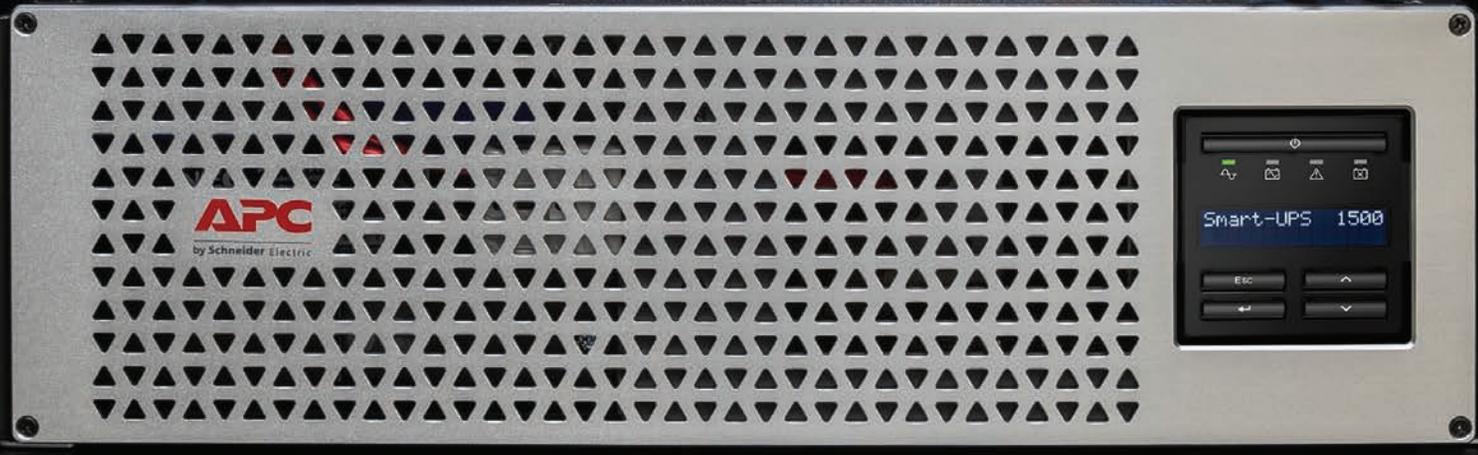
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## Protect your data and stay connected at the edge.

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

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Life Is On



# Data analytics to be used to predict congestion?

Ranplan Wireless has received £300,000 funding over a two-year period from Innovate UK to develop a data analytics platform that can be used to predict and manage congestion in smart cities.

Innovate UK is part of UK Research and Innovation, a non-departmental public body financed by a government grant-in-aid. Its aims is to drive productivity and economic growth by supporting businesses to develop

and realise the potential of new ideas. Since 2007, Innovate UK has invested around £2.5bn in businesses across the UK, matched by £1.8bn from industry.

Ranplan – which claims to be the developer of the world's first 5G combined in-building and outdoor wireless network planning tool for urban environments – will lead the research project to develop a data analytics platform. It will work with the University of Sheffield, Jinan University, and East China University of Science and Technology, along with telecoms operator China Unicom.

Their aim is to develop machine learning models and techniques to create a platform



**Ranplan believes data analytics, the IoT, and 5G are the building blocks for future smart cities.**

that will provide town planners and managers will real-time intelligence on how citizens move around their cities.

By being able to identify patterns of movement, vehicle movement and peak traffic times, planners will be able to predict where and when traffic congestion will arise and make decisions on how to improve the efficiency of public transportation.

As an example, Ranplan says data collected can be used to facilitate smart mobility in urban areas such as traffic light control and scheduling, public transportation, preventative policing, as well as many other examples.

Alastair Williamson, the company's CEO, describes advanced data analytics, the IoT, and ultra-fast and reliable 5G networks as the "building blocks" for tomorrow's smart cities. He adds: "As urbanisation is set to intensify, causing issues in congestion and commuting delays, we need to better understand how citizens interact within their communities to improve public services, particularly during peak times." ■

## CITIC Telecom CPC increases cloud footprint with new services centres



**CITIC Telecom CPC claims the creation of the 'Europe and Russia Cloud Ring' will help regional customers accelerate their expansion plans.**

BCITIC Telecom International CPC plans to launch new cloud services centres in London and Moscow.

These latest additions are part of the Chinese ICT provider's cloud centre network expansion strategy. It also recently opened two facilities in Frankfurt and Cape Town, and now has a total of 18 centres globally.

According to CITIC Telecom CPC, the UK and Russia centres will provide further flexibility and benefits from secure multi-cloud connectivity, and increase the company's "unique" network footprint across East and West.

"In the past few years, we have been growing together with customers, with our footprint not only covering Asia Pacific to Europe and America, but also extending to Russia and South Africa," says Stephen Ho,

CEO, CITIC Telecom CPC. "This means we can continue to provide innovative ICT solutions to help our customers leveraging digitalisation to transform their businesses, and even the whole industry."

According to the company, its creation of a "Europe and Russia Cloud Ring" will be crucial for European-based enterprises who are looking to invest in and explore the emerging market and business opportunities in mainland China. CITIC Telecom CPC reckons the ring will provide a scalable cloud platform with full disaster recovery capability to intra-city, inter-city and cross-boundary redundancies. It adds that the network will also provide round-the-clock support, and claims this will optimise customers' IT investment, achieve a faster response time, and ensure business continuity. ■

## THE IoT CONNECTION

News & developments from the world of the Internet of Things. This month, we look at smart homes.

### Energy firms need to get smarter with smart meter rollout

Large energy suppliers will need to triple the current rate of smart meter installation to hit a target of replacing all existing meters by 2020, according to analysis from *Which?*

Part of the Consumers' Association, *Which?* says such suppliers are currently installing just 9.7 meters per minute. It found they would need to work around the clock and install 30 meters per minute every day for the next two years in order to fully replace the 46 million existing meters their customers have, and meet their targets as part of the £11bn roll out.

Up to 53 million smart meters, designed to replace traditional gas and electricity meters across homes and businesses, are due to be installed nationwide by the end of 2020. According to *Which?*, large suppliers have so far installed more than 11 million smart meters. This is just a quarter of the 46 million existing meters that could potentially be replaced.

*Which?* says smart meters are expected to save consumers money and produce economic benefits of around £16.7bn. However, it adds that a previous National Audit Office report stated these estimated benefits are based on the assumption that the meters are rolled out to virtually all consumers by the end of 2020. With just over two years to go until the deadline, the association warns that delays and subsequent increased costs will result in reduced savings for consumers. Government estimates for the expected savings for an annual dual fuel bill in 2020 have already fallen from £26 to just £11.

*Which?* also says that while smart meters potentially mean an end to readings and estimated bills, the rollout has been "plagued with problems" from the outset, including faulty in-house display monitors and devices that were no longer compatible when customers switched energy suppliers.



**Time2 CEO Kam Kothia reckons his firm is offering households a new and easier way to "protect their homes and enrich their lifestyles".**

### Time2 launching new smart home devices

Blackburn-based home technology company Time2 will use Tuya Smart's global AI and IoT platform for its recently launched system of smart home devices.

Time2's *Clan* system features connected devices controlled by a single app. In early November, the company unveiled three home security cameras as well as a smart light bulb and smart plug sockets.

Time2 claims ease of installation and use is a key feature. With no home hub to configure and no need for technical knowhow, it claims users can set up any *Clan*-based device on their home Wi-Fi in minutes. They can then manage their home, no matter where they are physically, from the single app on their smartphone or tablet, or by voice control via *Alexa* or *Google Home*.

The devices will run on Tuya Smart's global IoT platform which is also said to combine AI. This will mean *Clan*-users will, for example, be able to manage their devices utilising scheduling and automation tools powered not only by day and time but by features such as sunrise, sunset, weather conditions, etc.

Founded in 2014, Tuya Smart has offices in the US as well as in Germany. The company claims to serve "hundreds of millions" of consumers in more than 200 countries via its global OEM partnerships.

Tuya adds that its cloud service, which has accumulated data upwards of 15PB, complies with high-level encryption technology to guarantee its client's data security with GDPR certification.

## Vapour Cloud claims first with "groundbreaking" healthcare tool

Yorkshire-headquartered technology specialist Vapour Cloud says it has launched the first video tool of its kind for the UK healthcare sector.

Powered by SMS, it's claimed *TeleDOC* will enable GPs and other medical professionals to hold secure, encrypted, recordable, geo-tagged video calls with their patients, wherever they are located, on any device.

The system uses WebRTC technology and is said to enable clinicians to efficiently discuss and diagnose health issues remotely, before storing the encrypted video file in a secure vault.

Vapour Cloud adds that because *TeleDOC* works by sending the patient a one-time-use text message or email with a hyperlink which automatically activates the video consultation, there is no cost to the user. It says no user names, passwords or apps are required. Only two clicks are needed to authorise the camera which, says the firm, results in "maximum ease of use" and an appointment that is carried out in much

the same way as a face-to-face scenario.

According to Vapour Cloud, the launch of *TeleDOC* follows 12 months of development and an extensive three-month beta phase. The company says the SMS-powered service has been purposefully-developed so that it is easy to use, regardless of the patient's technical literacy. And because it is delivered by the surgery, there shouldn't be any charge to the patient.

While this is not the first time video technologies have been utilised within the healthcare sector, Vapour Cloud CEO Tim Mercer believes existing solutions are comparatively "cost prohibitive".

He adds that from a data security perspective, *TeleDOC* is fully compliant. "The secure vault means the data can be shared with other encrypted users to streamline a patient's care from start to finish, but amidst security concerns surrounding existing apps, ours is extremely robust. In fact, *TeleDOC* has already attracted the attention of government ministers keen to look closer at healthcare technology," says Mercer. ■

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# Keep calm and carry on

Having the right business continuity systems in place is crucial for any organisation where network downtime means loss of productivity, profits and even reputation.

## College recovers from fire with Scale Computing

Founded in Manchester in 1907, Xaverian College was a Roman Catholic grammar school for boys until 1977 when it expanded to become the mixed sixth form college it is today. This development led to a quick and vast expansion, and Xaverian is now responsible for the education of more than 2,400 students.

The college's initial migration from a physical to a virtual environment employed a combination of early Scale Computing storage-only systems, VMware virtualisation, and Veeam disaster recovery. After suffering a fire in the main server room, Xaverian took the opportunity to upgrade its hardware and chose Scale Computing's HC3 system with hyperconverged clusters for virtualisation and disaster recovery.

The college began its move to hyperconvergence four years ago by deploying a pair of three-node HC3 clusters, mirrored across two geographically diverse buildings. These ran 32 VMs alongside four physical machines serving the campus' seven buildings. By design, Scale says its HC3 clusters offer disaster recovery through high availability, cloning, replication and snapshots, providing

complete business continuity. Xaverian, which has also recently implemented Double Take high availability software, now also benefits from a cost-effective additional layer of geographically diverse disaster recovery, having re-purposed some of the original Scale storage hardware. After experiencing first-hand the benefits of hyperconvergence over a period of three years growth, the college added a further two nodes to each cluster.

More recently, following a period of monitoring data-throughput with the support of Scale service engineers, it became evident that the college needed a faster backplane, so the production cluster was upgraded to the latest spec with the support of partner Paralogic.

Scale says the upgrade has resulted in a noticeable increase in performance and backup efficiency, while previous latency issues have been completely eradicated.



Furthermore, the original production cluster was combined with the existing disaster recovery cluster to match storage capacity."

## Agency removes bugs in the system with ANT



Hertfordshire-headquartered search marketing agency Distinctly has a team of 15 who work with multiple clients on SEO, PPC and content marketing campaigns. As such, the company needs a dependable telephony solution as well as fast broadband to provide an optimum service level to its clients.

Previously, it was experiencing multiple problems with its existing provider, including an intermittent internet connection and phone calls regularly cutting out after 16 minutes.

Even more frustratingly, the provider was unwilling to offer a solution to these issues. Instead, it allegedly shunned all responsibility, claiming the problems were with Distinctly's network. Furthermore, it was slow to respond and didn't keep the agency informed of the progress of any faults reported.

All this caused a multitude of issues for Distinctly's business. It interrupted the agency's day to day services, and also resulted in a significant number of hours wasted as it tried to resolve the problems by itself. MD Tom Shurville says: "Without the technical support that one expects from a service provider, we felt like we were on our own in trying to find a resolution. It was therefore crucial that we not only found a company that could deploy a reliable solution, but also provide excellent customer service and support moving forwards."

After nine months of connection difficulties, Distinctly sought the help of ANT Telecom to find a working and reliable solution to meet its needs. With plans to expand its offices in Rickmansworth and London, as well as recruiting staff to work in remote locations such as Birmingham, it was crucial that the solution was scalable to suit the growing organisation.

According to Bucks-based ANT Telecom, Distinctly now benefits from a cloud-based telephony solution that runs on a "highly resilient" network. The firm says its system features expansion capabilities on a user-by-user basis, advanced hunt groups, mobile twinning and 5,000 minutes of inclusive calls per user. Furthermore, ANT says setting up users in remote offices or from home is easy to deploy in order to support Distinctly's expansion plans.

Since ANT deployed the solution, there was one incident that caused the internet connection to drop out. However, ANT says it quickly diagnosed that the problem was not stemming from its services and liaised directly with Distinctly's IT provider on a fix. With no need for

Distinctly to act as the 'middleman', the issue was quickly identified and measures rapidly implemented, allowing the agency's team to continue as normal, instead of wasting valuable time trying to fix the problem themselves.

## Sungard migrates Menzie in tight timeframe

Edinburgh-headquartered John Menzies is a logistics company with 25,600 staff working across has two operating divisions: Menzies Aviation is a global provider of passenger, ramp and cargo services and operates at 140 airports in 31 countries; Menzies Distribution handles around seven million newspapers and magazines each day, with deliveries to about 25,000 customers.

As part of its change management strategy, John Menzies has outsourced its IT and networks infrastructure to Sungard AS, and many services have transformed into cloud-based solutions. This has allowed the firm to focus on its core business, and also gives it the worldwide capabilities, reliability and agility its business demands.

However, before the IT transformation process could even begin, Menzies and Sungard faced a more immediate concern. Menzies' contract for its Cumbernauld data centre was scheduled to expire in a matter of weeks. Its strategy was to consolidate its four existing data centres into two resilient Sungard data centres from which Sungard would provide a PaaS solution. Sungard says it was a 'lift and shift' operation due to the timeframe that was so tight, contracts had not even been signed before the move date.

Furthermore, Menzies could not afford any business disruption, as CIO Mark Reid explains: "Menzies is a genuinely 24/7 business. For us, it's not just a few computers data processing overnight, but operations all around the world going at full tilt. When everyone is sleeping here in the UK, our teams in Australia and the West Coast of America are still working and the UK distribution business is at its peak. There's no such thing as a maintenance window."

Sungard says the migration was ultimately executed "flawlessly" and on time, in just eight weeks. Staff from Menzies IT infrastructure team in the UK and US transferred to the Sungard team to support all the transitions.

The next stage involved migrating Menzies' two remaining data centres, in Bracknell and Edinburgh, to the Sungard managed cloud. This was completed by the end of October 2016. It meant that the migration of four data centres and transformation of Menzies' IT infrastructure happened in just 12 months – a feat Sungard says would normally take several years.



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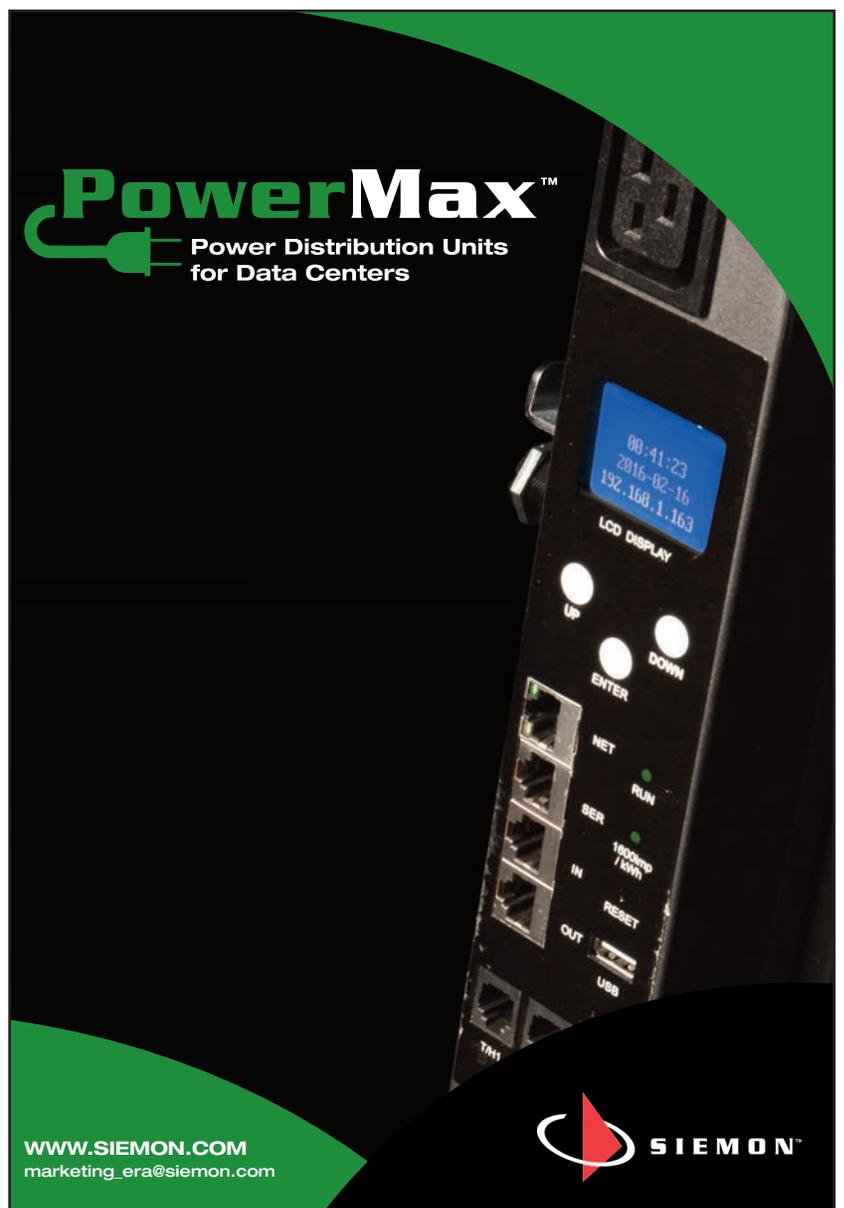


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Harvesting the future: TrueSpeed says the lack of fibre broadband for rural businesses is an area of concern given the vital role they play in the UK's economy.

# Faster traffic needed in the countryside

**Five per cent of the UK still lacks access to broadband connectivity. RAHIEL NASIR looks at the progress service providers are making in rolling out networks.**

At the start of the year, the government declared it had achieved its manifesto promise of extending superfast broadband to 95 per cent of the UK by the end of 2017. In an announcement made at the end of January, the Department for Digital, Culture, Media and Sport (DCMS) said the £1.7bn superfast broadband rollout had so far reached more than 4.5m premises, mainly in rural areas (see *Networking+ Feb 2018 issue*).

Citing figures published by Thinkbroadband, DCMS said more than 19 out of 20 homes and businesses now have the opportunity to upgrade their internet connections to speeds of 24Mbps or faster. It said that's more than double Ofcom's recommendation for a typical family home.

But according to Thinkbroadband, the 1.4m premises that make up the remaining five per cent are still struggling with no speed option above 24Mbps. Editor Andrew Ferguson said: "Although rural areas make up a large portion of the five per cent, there are many areas within major cities also struggling with broadband speeds. Ironically, Westminster is one of those areas which finds itself behind the curve, alongside areas of Manchester, Liverpool, Bangor, Glasgow and Belfast. Clearly more needs to be done to ensure no premises are left behind as we continue on the road to a superfast Britain."

Ferguson also pointed out that the

technology itself isn't the problem: "The parts of the UK with slow broadband speeds need more work to roll out better services. Those areas must therefore overcome the obstacles of time limitations and installation costs before superfast broadband is available."

## Bridging the divide

One specialist provider that is helping to overcome the challenges of connecting Britain's rural areas with full fibre is Gigaclear Networks. Established in 2010, the Oxfordshire-based company said its network currently reaches more than 200 communities across 20 counties including, Essex, Northamptonshire, Oxfordshire, Wiltshire, among others. Its ultimate aim is to reach 500,000 rural residential and business properties by 2022.

For example in East Berkshire, Gigaclear is giving more than 6,000 homes and businesses in rural parts of the country access to its ultrafast network. As part of the *Superfast Berkshire* project, the company has been awarded the contract to help extend better broadband coverage to more than 99.5 per cent of the county over the next two years. The contract, awarded by West Berkshire Council under its phase 3 programme, means that premises will

have access to speeds of up to 1,000Mbps. Gigaclear has also been working with *Superfast Berkshire* under the phase 2 contract to connect nearly 12,000 homes and businesses in West Berkshire to ultrafast broadband.

In a separate deployment in South West England, in April Gigaclear announced it had become the first utility provider since 1935 to cross the Clifton Suspension Bridge. The company said it laid fibre underneath the bridge to avoid any disruption to locals or the bridge itself. The fibre runs in a tray fixed to the wooden beams that make up the decking which, as well as protecting it from the elements also provides a stable network. Gigaclear says the aim is to provide a future-proof broadband solution to the "forgotten communities" that are "untouched" by other broadband rivals and have previously struggled with antique copper-based networks. It added that the investment will spell the end to the "clear disparity" between the fibre-rich city of Bristol and the digitally stagnant surrounding villages, with many residents limited and struggling with speeds as slow as 1Mbps. The full initial area of North Somerset is scheduled to be connected by late 2019.

Separately, Gigaclear is also working

with rural community broadband specialist Voneus to speed up the adoption of ultrafast services in areas that have either poor or no connectivity. Under a partnership agreement signed earlier this year, Voneus will offer residential and business customers a wide range of broadband services over Gigaclear's fibre network, with the ability to deliver ultrafast speeds of up to 1Gbps. For Gigaclear, the agreement will enable it to expand its existing ultrafast FTTH.

Voneus' fixed wireless broadband services are currently available in around 50 rural communities spanning Bedfordshire, Buckinghamshire, Cheshire, Devon, Gloucestershire, Oxfordshire, Somerset, South Wales, Staffordshire, Warwickshire, Northamptonshire and Wiltshire. In February, it was granted powers by Ofcom under the Electronics Communications Code that will help it accelerate the rollout of superfast services to hard-to-reach communities. Speaking at the time, Alan Seddon, the company's operations director, said: "There are numerous rural communities across the UK that are still struggling to get access to superfast broadband; many are stuck on lengthy waiting lists, in the hope that broadband will eventually reach their neighbourhoods. These Code Powers will



**Gigaclear has laid fibre under the Clifton Suspension Bridge as part of a deployment to connect "forgotten communities" in North Somerset.**

cut the wait for the communities we serve. They make it simpler for us to expand our infrastructure into new places, meaning we can more quickly bring superfast broadband to more homes and businesses."

Voneus reckons it can install broadband quickly and cost effectively, while delivering speeds of between 35Mbps and 50Mbps using 'Wireless FTTH' solutions that include the installation of an antenna to the customer's premises and a dedicated router.

Seddon adds that not only is the company focused on bringing superfast broadband to more villages, it is also committed to ensuring its network infrastructure blends in with the environment. Wherever possible, it uses telegraph poles or existing buildings to mount its antennae and, as Seddon explained, while many villages are desperate for broadband, they don't want ugly masts blighting the landscape. "Our idea has always been to build out networks that are sympathetic to the surrounding environment, making use of existing buildings like churches and village halls wherever we can."

Another company that is working to connect rural areas is Worcester-based ISP Airband. It claims to operate a large mast network which currently offers ultrafast connectivity to more than 20,000 premises in Worcestershire, Herefordshire, Gloucestershire, Warwickshire, North and South Wales, Devon, Somerset and Shropshire.

Airband's Shropshire and Devon deployments are part of the government's superfast broadband rollouts – under contracts worth £11.2m and £8m respectively, it plans deliver superfast connectivity to 30,000 premises across these counties by 2020.

For instance in June, the company said it had completed a three-year project to deliver superfast broadband access to 5,800 premises in the Dartmoor and Exmoor National Parks, where it used fixed wireless technology to overcome the challenging terrain and protected status of National Parks and Areas of Outstanding Natural Beauty.

Meanwhile in February, Airband announced that the first customer on the *Connecting Shropshire* project has gone live. The initiative is part of the government's superfast broadband rollout and is supported by the Marches Local Enterprise Partnership which has an £11.2m contract to connect more than 14,000 local premises by 2020.

Airband project manager Dave Lloyd said: "The project will be going live in five

phases. Phase 1 is due to complete in the spring and involves 28 transmitter sites. During this period, Airband will be making superfast broadband available to 7,000 homes. Further areas will be going live incrementally as the network is created."

The ISP's deployment of fixed wireless broadband works by sending a radio signal from a transmitter site to a small receiver attached to the customer's property. A cable is then run into the building allowing the end-user to access the internet in the same way as any other broadband connection. The transmitter provides 30Mbps connectivity to parts of Sheriffhales and Shifnal parishes as well as other communities further east.

Airband's first customers went live just a few weeks after the launch of its first transmitter site which serves more than 300 homes and businesses. IT security manager Andrew Lee and his wife Sulayma live in a village outside Shifnal and had been waiting for faster broadband for four years. Speaking at the time, Lee said: "We live in a tiny village with just 46 houses three miles from Shifnal, close to Cosford airbase, but our communications have always been poor. When BT upgraded the exchange in Albrighton it didn't make any difference to us, so we were really keen to get a better connection with Airband.

"It's a challenging location so installation wasn't straightforward. I think this is because we are in a valley and it took a while

to establish line-of-sight connection and also because our house is a listed building."

He continued by saying that prior to the Airband connection, internet download speeds were 2.5Mbps which meant video streaming was always buffering and working from home was almost impossible. Now, the couple are said to have a broadband connection that offers 30Mbps.

Since then, Airband has received £16m investment from the Amber Infrastructure-managed National Digital Infrastructure Fund to help connect more rural homes and businesses with high-speed broadband. The firm said the funding will enable it to expand its network to an additional 50,000 business and residential premises in England and Wales by 2021. Airband added that it will also be used to drive further technology investment as it prepares to roll out *RuralOptic*, its FTTP broadband solution.

## Relying on "antediluvian" copper lines

Another company that has recently received multimillion backing for rolling out its fibre networks is TrueSpeed Communications. Established in 2015, TrueSpeed claims it has already passed more than 5,000 rural households and businesses in villages in North-East Somerset, and is on track to pass more than 12,000 by the end of the year, with an ultimate goal of passing 220,000 properties by 2025.

Aviva Investors has committed £75m to supporting the introduction of TrueSpeed's ultrafast full fibre broadband network across South West England. TrueSpeed says the funding will enable it to accelerate its expansion strategy to pass up to 75,000 homes and businesses in the region.

According to CEO Evan Wienburg, the lack of fibre broadband for rural businesses is an area of concern given the vital role they play in the UK's economy. Citing the latest statistics from the Department for Environment, Food and Rural Affairs, he said such businesses account for around 24 per cent of all registered businesses and employ 3.5m people.

He added: "We recently conducted a study into the state of broadband in South West England, an area characterised by dispersed, rural communities. It revealed a region blighted by slow, intermittent broadband and a desire for faster broadband access that even outranked other vital local infrastructure investments such as new bus or rail transport links

(44 per cent), new roads (42 per cent) and more electric car charging points (22 per cent). High-speed connectivity is today fundamental to regional growth."

Wienburg believes that the notion of superfast broadband, with its reliance on "antediluvian" copper lines, is a poorly labelled interim fix. He also believes that the Advertising Standards Authority should reconsider its decision to permit part-fibre services to be advertised as 'fibre' broadband. "The decision allows the industry behemoths to continue to promote sub-standard part-copper broadband to businesses and to further bamboozle consumers, rather than focusing on building out their full fibre networks."

John Mitchell, product management director at Sorrento Networks, is likely to support this view. Based in Belfast, Sorrento specialises in optical network solutions and also manufactures its own wavelength-division multiplexing products.

When asked if the government's claim of reaching 95 per cent of the country with superfast broadband is accurate, Mitchell said: "This is an accurate statement. The definition of superfast is download speeds of >30Mbps. It is important to note that 95 per cent UK coverage is recognised as the maximum limit of superfast rollout due to physical network constraints.

"Superfast, as deployed by Openreach, is based on FTTC technology. This is a part-optical fibre/part-copper wire architecture, where the feeder cable from the exchange to the street cabinet is optical fibre and the drop cable from the street cabinet to the customer's premise is the existing twisted pair copper telephone wire. The limit to download speed is the length of the drop copper cable."

Mitchell explained that in standard ADSL broadband, the active electronics driving the copper drop cable are located in the operator's exchange or POP. This is typically up to 7km in length, but can be 20km in worst case scenarios. He said the longer the copper drop cable, the greater the signal attenuation, thus diminishing the download and upload speeds and to almost nothing in the case of very long copper cable lengths.

"In the FTTC architecture the active equipment, which drives the copper drop cable, is moved to street cabinet. This shortens the copper drop cable length to typically within 500m – the majority of urban street cabinets have this span of reach. Operating within this span, FTTC technology is able to offer at least 30Mbps and in some cases up to 80Mbps, thus fulfilling the definition of 'superfast'.

Outside urban environments, Mitchell points out that the typical FTTC span increases significantly. "Where the copper drop cable from street cabinet to customer premise exceeds 1km there is little significant improvement, if any, in deploying FTTC technology over standard ADSL technology as current operates from operator exchange/POP locations. Therefore the current wave of superfast rollouts have not, and cannot, address the needs of the rural and semi-rural environment that is the remaining five per cent."

According to Mitchell, the solution here lies in technologies which give the same download and upload speeds and quality of service independent of distance. This is perhaps where service providers such as TrueSpeed come in as it uses Active Ethernet technology to provide multi-gigabit capable symmetrical speeds through a full fibre network.

TrueSpeed also believes that making digital infrastructure projects the top priority would also help overcome the challenges. Wienburg said: "The National Infrastructure Assessment report from



**Some of the relay equipment rural community broadband specialist Voneus sometimes has to install on farms or commercial buildings.**

the [National Infrastructure Commission] argued last summer that Britain's future lies in digital infrastructure such as 5G and fibre rather than in an extension of Victorian-era railway lines (e.g. HS2)."

## Overcoming the challenges

The UK Fibre Connectivity Forum (UKFCF) is helping to overcome the challenges by working towards identifying the issues regarding the roll out to rural and remote areas, and says it has been lobbying for this cause over the past year. Its chairman Askar Sheibani – who is also CEO of the Comtek Group as well as chair of Deeside Business Forum – said by bringing together all stakeholders, the forum has pushed activity forward at a grass roots level at a faster pace than may otherwise have occurred.

"Our campaign has been launched in North Wales and has brought together, public sector, businesses, MPs, AMs, local government and community representatives across the six counties under the North Wales Economic Ambition Board.

"The board now has a strategy in place to ensure that North Wales will have ultra-fast broadband not only in the towns but also in the most remote communities. We applied for and won funding from the government as part of the North Wales Growth Deal. We are in the process of applying for LFFNF from the DCMS and the result of this will be known soon."

The government launched its £190m LFFNF (Local Full Fibre Network) Challenge Fund a year ago in an effort to stimulate commercial investment in full fibre networks across the whole of the UK, including rural and urban locations. It aims to support companies who demonstrate approaches that encourage additional private investment and by making sustainable commercial deployments viable.

For Sorrento Networks, the challenges for rural broadband enhancement are driven not only by investment but also by technology. Mitchell said: "Copper lines are now

redundant when faced with the bandwidth demands of the 21st century. Fibre optic-based connectivity will have to be expanded through a conjunction of existing fibre assets and new fibre plant deployments. The former will need legislation and drive from the regulator to open up duct, pole and dark fibre assets from the incumbent operators to the open market."

Sheibani is likely to support this view: "Businesses cannot connect to the BT infrastructure in terms of leasing dark fibre. BT has a monopoly and chokes progress with restrictive rules and regulations which need government intervention to overcome them. The unfair hold which BT has over the roll out of broadband is a major obstruction in the creation of a level playing field for competition which would make the end product far more affordable for consumers."

Wienburg pointed out that TrueSpeed and other challenger firms are demonstrating



**Airband's fixed wireless broadband network works by sending a radio signal from a transmitter site to a small receiver attached to the customer's property. In February, the ISP went live with superfast broadband services in rural Shropshire after launching its first transmitter site which provides connectivity of 30Mbps.**

that it is possible to run a commercial business connecting the unconnected and poorly connected to full fibre broadband in areas previously considered too difficult to do without subsidy. And he certainly doesn't mince his words when he says that the priority has to be extending full fibre coverage to everyone in the UK.

"Instead of wasting time – and a considerable amount of taxpayers' money – on inadequate broadband roll outs, large and small providers alike should be rolling out full fibre networks to every household and business in the UK.

"The priority has to be extending full fibre coverage to everyone in the UK, that's why it's important that local government ensures these providers are not allowed to use taxpayers' money to overbuild in areas where there is already full fibre provision." ■



**"Instead of wasting time – and a considerable amount of taxpayers' money – on inadequate broadband roll outs, large and small providers alike should be rolling out full fibre networks to every household and business in the UK"**

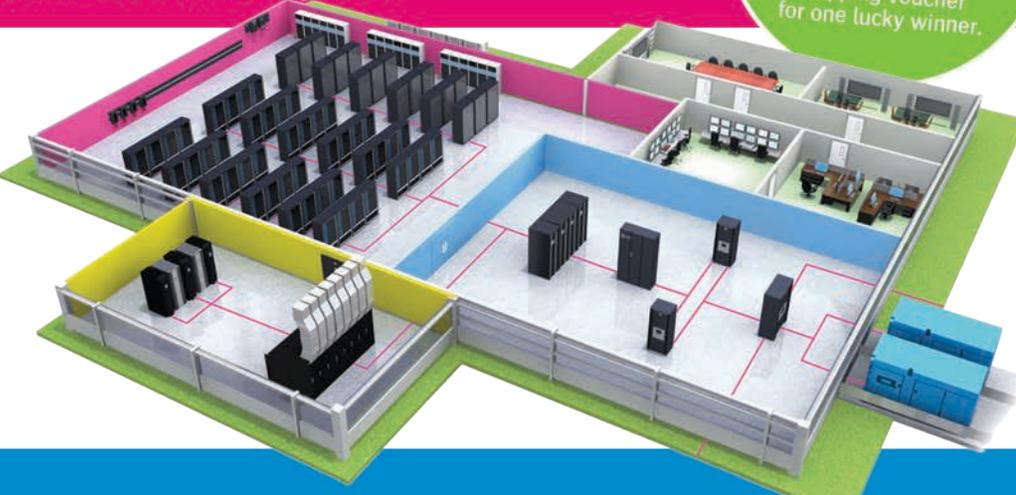
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# Powering ahead

We round-up some of the latest power distribution units to plug into. Plus, MARC GARNER on how to select the right device for your needs.



A good methodology for selecting the optimal PDU for an IT rack is to follow this five-step approach that prioritises and simplifies the decision-making process.

## 1. Determine output plug type and quantity

The most common plug types in data centres are C-13 and C-19 connectors defined by IEC 60320. The best option is to choose a rack PDU with a combination of C-13 and C-19 outlets. This ensures there are more of each outlet type than is needed for the initial load, and allows for more equipment to be added later if required.

## 2. Estimate power capacity

Several methods can be used to estimate rack equipment power load. The nameplate rating, based on power draw at full load, is typically higher than actual usage. When choosing a PDU, first assume a rack power level based on an estimate of total data centre utilisation, e.g., if the overall power delivery is 1MW and the IT load consists of 100 racks, then a maximum power level could be estimated at 10kW per rack.

## 3. Determine input plug type

The site voltage (208V or 240V) and phase (single or three phase) will dictate the input

power needed for the rack. To mitigate overload risk, it is advisable to limit PDUs to 40A or less for single phase, and 32A or less for three phase applications. An appropriate whip length, typically two metres, should be selected to allow the cord enough slack to reach the power outlet.

## 4. Select visibility and control options

Various levels of visibility into rack power are available. The most advanced is metering, where built-in network management capabilities alert users as loads approach pre-determined thresholds. Many metered PDUs also measure temperature and humidity. In addition, switching capability will allow power outlets to be turned on or off remotely. A rack PDU should be rated for continuous use at up to 50°C, and metering should have an accuracy tolerance to within five per cent.

## 5. Select form factor and mounting

Rack PDUs are deployed into the back of a server cabinet in one of two mounting orientations: a horizontal 19-in rack-mounted version used mainly with open-frame racks; or a vertical 0U PDU that positions outlets closer to the equipment they power. The latter is the preferred option for data centres because it consumes no rack space, enabling shorter power cords and therefore less cable management.

Marc Garner is VP of Schneider Electric UK's IT division.

## Olson Electronics

is planning to launch a completely new range of products aimed at the data centre market in 2019, including the next-generation of its intelligent power management solutions.

Providing remote and real-time measurement of voltage, current, true power, power factor, kWh, temperature and humidity, Olson says the new range also has a coloured graphical interface allowing configuration and control at the PDU. The firm says the display is configurable in four orientations to ensure it is easy to read regardless of the way the unit is mounted. It adds that there's also a USB port which enables setup configuration data to be backed up or restored, and for fast programming of multiple PDUs.

Olson also plans to launch a new option which allows the remote switching and measurement of up to 32 channels. It says power measurement can be set for total

PDU load or each individual output, and all channels can be programmed in a sequential start pattern to avoid surge currents at power up.

Furthermore, a 'UPS Active' signal can also be used to automatically shut-off pre-programmed non-essential outlets when the UPS is active to conserve power.

Following the trend for lower power devices, Olson says it will introduce a range of PDUs with higher outlet socket density to enable more devices to be connected to a single input than with previous versions. It adds that a compact design will free-up cabinet space

In a first for the company, the new line-up will also include PDUs incorporating C13 and C19 Sockets with IEC Lock technology to prevent cables from being accidentally unplugged. The lock can be used with any manufacturer's IEC cable and, unlike cable clips, Olsen says it cannot fall out causing potential damage to other electronic equipment in the rack.

## Siemon

says its PowerMax intelligent PDUs deliver real-time power information with varying degrees of smart functionality to help reduce energy costs, prevent downtime and improve power usage effectiveness (PUE).

Using an embedded web-based interface which the company describes as "intuitive", the units are available in various versions. They include models that offer smart functionalities such as device- and outlet-level monitoring, as well as ones that are switched for individual outlet control, and managed for both individual outlet control and individual outlet monitoring.

Siemon reckons the range offers several advanced features. For example,

IP address sharing allows up to four intelligent PDUs to share a single IP address in a master-slave hierarchy.

They also have an integrated USB port for connection to a wireless network or for software upgrades, along with sensor ports for monitoring temperature, humidity and other environmental conditions at the cabinet level.

Available in single phase and three phase power and in both horizontal and vertical styles, the vendor claims all its PowerMax PDUs have "industry-leading" accuracy of ±1 per cent.

To complete the line-up, Siemon also offers basic and metered PDUs that are designed to enable simple and reliable power distribution to rack mounted IT equipment.

## Tripp Lite

has introduced a selection of three-phase monitored and switched PDUs with new features to improve load monitoring. It claims the features make its new vertical PDUs "essential" for data centres, computer rooms and high-density network closets.

Tripp Lite says the units have a built-in LX Platform that is mobile-friendly and uses an HTML5 interface for greater browser compatibility without the need for Java. The interface supports complete remote access for real-time remote monitoring of voltage and load levels, and email notifications via a secure web browser, SNMP, telnet or SSH.

The company adds that the switched models offer individual outlet control to decrease the need for on-site visits. It says this, in turn, can lower maintenance costs and total cost of ownership, making its new PDUs "a worthwhile investment".

For enhanced local monitoring, there is also a new touchscreen LCD which, says the vendor, features intuitive, easy-to-navigate menus. Tripp Lite says the display reports detailed network information, input per phase, output per load bank and output per outlet (varies by model). The touchscreen can also generate a unique QR code to allow read-only access to the PDU via a mobile device.

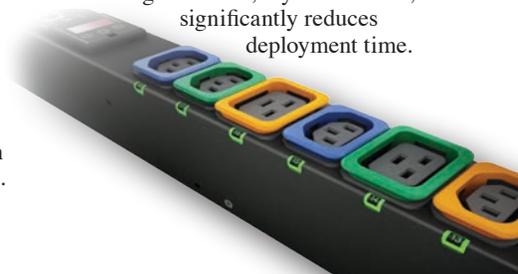
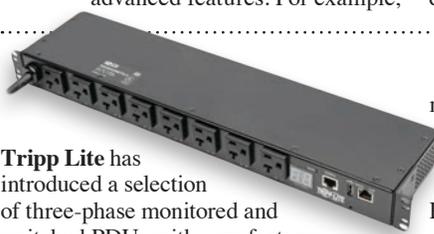
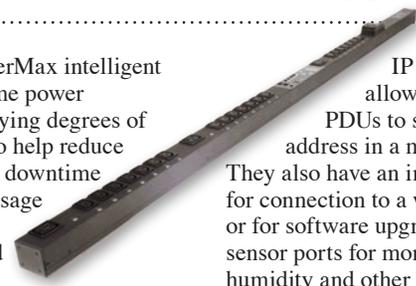
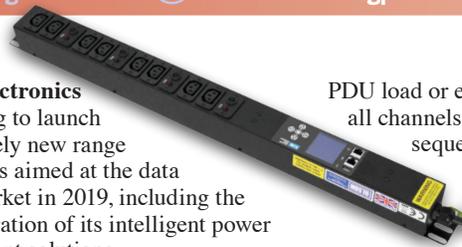
When used with optional *EnviroSense2* sensors, the LX Platform interface and LCD can also provide monitoring of temperature, humidity and dry contact connections.

Vertiv Geist says its new switched rack PDUs (rPDU) provide a comprehensive view of critical IT equipment power usage, both at the rack and via remote access with the added ability to remotely turn on, turn off, or reboot power at each outlet.

Vertiv Geist claims the monitored and switched models can monitor input power to plus or minus one per cent accuracy, in addition to standard readings including amps, Volts, Watts, kWh and power factor.

According to the firm, the switched models have many "notable" features such as the ability to control input power at each outlet, upgradable functionality to monitor each outlet, and patented U-lock receptacles that lock any cord in place to eliminate unintentional disconnection. They also have the ability to remotely turn on, turn off, or reboot power at each outlet.

Both models have a hot swappable communication module to allow rapid change in the field. They also include the Vertiv Intelligence Director. This gives users the ability to daisy-chain up to 50 devices with a single IP address when deploying the monitored and switched units. They can access data from all downstream rPDU and Vertiv's *Liebert GXT4* UPSs from one master rPDU, as well as aggregate data by grouping devices by rack or row. Downstream devices self-configure which, says the vendor, significantly reduces deployment time.



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in touch with your data centre

**LOCAL MANAGEMENT**

LCD TOUCHSCREEN

- Menu-driven access to IP address, input current per phase and output current per load bank with ±1% billing-grade accuracy

ENVIROSENSE

- Optional EnviroSense2 modules monitor temperature, humidity and dry contact connections

**REMOTE MANAGEMENT**

LX NETWORK INTERFACE

- Access via mobile-friendly, Java-free HTML5 web interface, SNMP or SSH/telnet
- Real-time remote monitoring of voltage and load levels

Tripp Lite makes 50+ PDUs—see them at: [www.tripplite.com](http://www.tripplite.com).

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## Data is the 'new oil' for fast moving business on the hunt for tech specialists

Specialist IT talent is in greater demand than ever before, according to Reed Technology.

For its *State of Skills* online interactive tool, the recruitment firm analysed 10 years of data from Google and O\*NET (Occupational Information Network) to find out more about the changing roles, skillsets and software driving the tech sector.

Reed says the research charted a rapid rise in interest over the past five years for roles such as dev ops engineer (986 per cent) and data scientist (428 per cent).

At the same time, the company found that interest in more general roles such as web developer have fallen, with a 52 per cent drop from October 2008 to July 2018.

According to Reed, 'deductive reasoning' and 'critical thinking' ranked as the most valued skills. It adds that within the data scientist role an aptitude for 'education and training' is also ranked as most important.

"Companies want talent that keeps them ahead of the game and many are turning to niche specialists to achieve this," says Reed Technology director Andrew Gardner. "Candidates are always searching for the role that makes them indispensable for the next decade – as such, specialist roles are the way to go."

He continues by saying data is now viewed by companies as the "new 'oil'", and businesses want to be able to harvest the benefits it can deliver. "Organisations will be on the hunt for technology specialists who can translate data into commercial gain," concludes Gardner.

## More training needed to create SDN and NFV experts

The skills gap in software defined technologies could stifle innovation, warns consultancy firm WhiteSpider.

Its CTO and founder, Phil Lees, believes that if left unchecked, a lack of tech specialists in SDN and NFV could hamper the drive to automation and digitisation.

Citing data from research carried out by Cartesian earlier this year, Lees says 80 per cent of network engineers say greater investment was needed to train staff on SDN and NFV technologies. He says the lack of investment here as well as in other software defined technologies (collectively referred to as 'SDx') is rapidly widening the "already significant" IT skills gap.

"The benefits of SDx are well understood: cost reduction, flexibility, centralised management and more responsive service deployment," says Lees. "While these benefits are driving interest from UK organisations it is, unfortunately, all too common to see racks of kit sitting, unused, in the comms room, or installed with limited services migrated."

He warns that without adequately trained engineers to install, configure and then manage these deployments, the benefits are out of reach.

"Network admins are historically tied to traditional, distributed and manually operated environments and have developed the skills to match. While SDx environments require a similar understanding of networking operations, there is also a need for new – predominantly programmatic – skills to leverage the full capabilities of the technologies."

Lees reckons that getting SDx skills in place means better utilised, better motivated and more strategic IT teams that spend less time on the tasks that "negatively" impact productivity. "CIOs see time freed-up for network admins and management teams alike. IT staff are able to focus on strategic and mission critical activities, adding true value to their

organisations – and their new skills will be ever more essential in years to come."

Anticipating this, Lees says some SDx vendors and their partners are investing heavily in programmes to support or outsource the management of these services. He says this makes it possible for enterprises to reap the benefits of SDx without the barriers to entry.

## IN BRIEF...

■ QA has teamed up with The AntiSocial Engineer Ltd. on a training programme to help protect against social engineering attacks. Delivered through practical workshops and live demos, it's claimed it will help organisations understand how they would be targeted by an attacker, and how they can improve their security defences. The AntiSocial Engineer is believed to go further than traditional testing and provides

a "unique" insight into both its own ethical social engineering assessments and from the perspective of malicious attackers. The company is said to offer an "innovative" approach to build a phishing defence by teaching organisations how to 'build their own' phishing platform.

[www.qa.com/antisocialengineer](http://www.qa.com/antisocialengineer)

■ CNet Training claims it has created an "elite" group of data centre professionals following the first graduation ceremony for its masters degree programme in *Data Centre Leadership and Management*. CNet says its created the programme to help technical managers add business leadership skills to their existing knowledge base. It reckons arming them with the capability to manage business imperatives will mean they can contribute to growth, innovation and insight, and have a bigger impact on the business

itself. The deadline for applications for the next programme ends on 11 January 2019. [www.cnet-training.com/masters-degree](http://www.cnet-training.com/masters-degree)

■ The second year of the government's cyber schools programme opened in mid-November following a successful pilot in England last year. Delivered for the Department of Digital, Culture, Media and Sport (DCMS) by SANS Institute, *Cyber Discovery* is designed to inspire teenagers to think about a career in cyber security. Over 23,000 young people have already taken part in the £20m programme which uses interactive games to teach teenagers about a wide range of cyber security subjects including digital forensics, defending against web attacks and cryptography. Those who perform at the highest levels, will also have the opportunity to attend a special summer camp to hone their skills and meet industry leaders. [www.sans.org](http://www.sans.org)



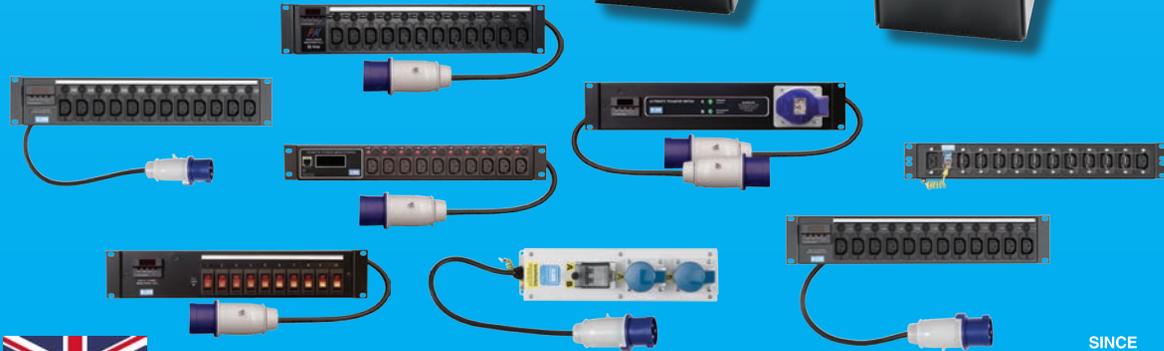

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