

# networking

FIXED & WIRELESS NETWORKS FOR ENTERPRISE USERS

## Up in the cloud

Gatwick becomes first major airport to introduce cloud-based flight information

News, p6



## Value for taxpayer money

Public services need to keep an eye on network spending.

Real World Networks, p8



## A healthier network

The pain points of transitioning to the new Health and Social Care Network.

Feature, pp11-13



## Well worth watching

Surveillance cameras to help improve security and safety in public and private.

Off-the-shelf, p14



# Superfast broadband available to 95 per cent of premises

The Government has said it has achieved its manifesto promise of extending superfast broadband to 95 per cent of the country by the end of 2017.

Citing figures published by thinkbroadband.com, it 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 – that's more than double Ofcom's recommendation for a typical family home.

In an announcement made at the end of January, the Department for Digital, Culture, Media and Sport said the £1.7bn superfast broadband rollout had so far reached more than 4.5 million premises, mainly in rural areas. It claimed the programme had created around 50,000 new local jobs and generated an additional

£8.9bn in turnover in the areas covered between 2013 and 2016.

In total, around 800,000 homes and businesses were reached last year through the BDUK programme alongside commercial delivery with Openreach, the government's major partner. As a result, the 95 per cent target was achieved in December 2017. DCMS secretary Matt Hancock said: "We're reaching thousands more premises every single week, and the next commitment is to making affordable, reliable, high speed broadband [10Mbps or faster] a legal right to everyone by 2020."

Meanwhile, Rachel Neaman, CEO of not-for-profit organisation Corsham Institute, pointed out that bridging the 'digital divide' goes beyond internet access. "We have known for a long time that many people



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

still lack the basic digital skills and support networks to make the most of online opportunities. The pace of tech-driven change is now creating a further challenge if we want everyone, no matter where they live, to work and thrive in our digital world throughout their lives."

Neaman said she wanted businesses and policymakers to provide more teaching, training and support for workers. She added

that it's also time for a greater focus on digital education and social media awareness in schools.

Thinkbroadband.com editor Andrew Ferguson also said that not everyone was celebrating the government's achievement, referring to the 1.4 million premises that make up the five per cent still struggling with no speed option above 24Mbps.

(continued on page 2)

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## UK's top data centre sites revealed

London remains the UK's most popular data centre location, according to property consultant, Bidwells.

The capital currently has 71 data centres which is the highest number in the country. As well as its proximity to digital businesses and "excellent" transport links, Bidwells says London also has some of the best universities and colleges, giving data centres easy access to highly skilled graduates.

The city forms part of the so-called 'Golden Triangle' which also includes Oxford and Cambridge.

Other UK data centre hotspots named by the firm include Manchester. It says the city has become a technology hub and is becoming a viable option for data centre operators to set up their businesses, boosted by the government's Tech North startup initiative. Bidwells says the location also means access to talent from some of the best universities and IT colleges, while the city's internet speeds are also comparable to the best in the country.

Berkshire is also noted for its thriving technology community, and proximity

to London and business estates such as Thames Valley Park and Arlington Business Park. Furthermore, Bidwells says major tech companies have been setup in the Slough and Reading areas.

Other hotspots mentioned by the firm include Birmingham, Newcastle and North Wales. It goes on to point out that London also heads Cloudscene's top 10 directory of data centre locations around the world which also includes: Amsterdam; Frankfurt; Washington DC; Paris; San Francisco Bay Area; Los Angeles; Sydney; Dallas; and Chicago.

"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 Manchester and Berkshire to follow in its footsteps," says Bidwells.

But the firm also warns that while the UK remains one of the largest data centre markets, Brexit could "strongly influence" the decisions of investors to look outside the country towards places such as Dublin, Amsterdam and Frankfurt. ■

**StorONE's storage system use algorithms and software rather than hardware. Those behind the company claim this makes the problems of high capacity and high performance "yesterday's concerns".**



## Industry veterans back platform promised to be market 'disruptor'

A new company that has promised to disrupt the storage market has announced a formidable line-up of industry veterans to guide and accelerate its growth.

StorONE recently launched its *TRU* (Total Resource Utilization) platform after six years of "deep technical development" and more than 50 patents. The company says its aim is to provide a software solution that achieves the most cost-effective results for customers, while significantly reducing the amount of hardware needed. As a result, StorONE claims it will deliver a complete enterprise-class storage solution for less than \$0.01 per GB.

Headquartered in New York with offices in Dallas, Tel Aviv and Singapore, the company has now announced its advisory board which includes a number of technologists and what it describes as "industry heavyweights".

They include John Thompson who took over as chairman of Microsoft from Bill Gates in 2014 and has also previously served as CEO for Symantec after a 28-year career with IBM.

He is joined by Ed Zander who helped deliver 12 straight quarters of revenue growth for Motorola during his tenure as CEO and chairman. Zander also spent 15 years as president and COO at Sun Microsystems.

Kirk Bradley is another big name technologist named on StorONE's advisory board. He is currently one of Oracle Corporation's longest-serving members of staff, having joined the company's technical team in 1981.

"We have been working diligently developing and perfecting the industry's most efficient storage software with the insight and knowledge procured from all the members of our Advisory Board," says StorONE CEO and co-founder Gal Naor.

"Ed, John and Kirk have been instrumental in helping define our business focus and our holistic approach centered on software algorithms rather than hardware engineering. Their expertise in building large and successful companies for the long term is in line with our plans for StorONE."

# Huawei commits billions to the UK over the next five years

Huawei Technologies will procure a total of £3bn in the UK over the next five years, helping British companies to increase exports to China.

At a meeting with prime minister Theresa May held in Beijing at the start of February, Huawei chairwoman Sun Yafang reaffirmed her company's long-term commitment to the UK. She said: "Over the coming years we look forward to continuing to collaborate with our customers and partners to help keep the UK at the very forefront of the digital age."

In 2012, Huawei pledged to invest and procure £1.3bn in the UK from 2013-17. The company said this target had been exceeded, and that it has invested and procured £2bn during that period.

Huawei currently employs more than 1,500 people in the UK in 15 offices, including its head office in Reading. The company has two joint innovation centres in the UK, one with BT in Ipswich and another in Newbury with Vodafone. It also has three R&D sites which include the Centre for Integrated Photonics in Ipswich, Neul in Cambridge, and a facility in Bristol.

Huawei adds that its ongoing cooperation with UK universities has



**At a meeting with the prime minister in China, Huawei chairwoman Sun Yafang said her company will continue to help build a better connected UK.**

seen the company work with more than 20 different universities on more than 100 individual research projects over the last five years. The firm says its plans to expand its university partnerships and the range of research topics.

"Huawei's £3bn announcement is yet another significant vote of confidence in our world-leading tech industry," claims international trade secretary Liam Fox. "With 90 per cent of global growth forecast to come from outside the EU, my international economic department is working to ensure Britain continues to benefit from the vast opportunities available as we leave the EU."

## Superfast broadband available to all but five per cent of premises

(continued from page 1)

"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."

One company that is helping to connect Britain's 'not spots' is rural community broadband specialist Voneus. Earlier this year, 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.

"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," said Alan Seldon, customer services director, Voneus. "These Code Powers will 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 claims it uses innovative solutions where alternative services may not be available. The firm 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.

Separately, Voneus has also partnered with Gigaclear to speed up the adoption

of ultrafast broadband in rural areas. Under the agreement, 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 partnership will enable it to expand its existing ultrafast FTTH network of more than 200 communities across 20 counties.

Another company that is working to connect rural areas is Worcester-based ISP Airband. It recently 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.

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. The transmitter provides 30Mbps connectivity to parts of Sheriffhales and Shifnal parishes as well as other communities further east.



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## THE WORLD ACCORDING TO...

Ady Moores, CEO, P2i

### Nano coating technologies: protecting our future 5G and IoT networks

Last year, Gartner predicted that by 2020 IoT technology will be in 95 per cent of electronics for new product designs. In basic terms, this means the majority of future electronics will be connected to the internet. Coupled with Gartner's forecast that there will be 20.4 billion IoT devices deployed by then, that's a whole lot of connectivity.

For the IoT to function properly and remain cost effective it will require continuous uptime and minimal maintenance – these networks need to be 'always on'. As 5G is deployed commercially and small cell deployments proliferate, this connectivity will be facilitated by faster and smarter technologies.

But it doesn't matter how good the network is if devices that connect to it are damaged and unable to transmit data, or transmitting inaccurate data. With many IoT devices just a link in the chain, the failure of a single device can have wide-reaching consequences. It's vital that the data collected from each node feeds into and flows through the network as a whole, with

interrupted services unacceptable to users.

In any environment that you can imagine internet-connected electronics operating in, one of the main factors that affects performance and connectivity is humidity. This is particularly true for those sensors and devices that are exposed to the elements. This is where hydrophobic nano coating technologies come into their own.

Traditional waterproofing solutions require physical seals to be built into devices to stop water ingress. However, nano coating technologies cover the complete device inside and out with a nano-scale monomer that chemically bonds to the surface.

Nano-coating is a more cost-effective solution than physical barriers, and enables greater design freedom. Whilst many IoT devices deployed outside and in extreme weather conditions will feature ruggedisation, the addition of nano coating on such devices means that even when physical barriers are compromised, they can continue to withstand water and liquid ingress corrosion for years to come.

## ITV archives digital content with Spectra Logic storage systems

ITV is using storage systems from Spectra Logic to protect and preserve its digital assets over the long-term.

As the UK's largest commercial television network, ITV produces massive amounts of digital content that needs to be stored for up to 30 years. It anticipates reaching volumes of up to 20PB over time, with an estimated increase of about 2PB each year.

The broadcaster therefore needed a solution that was high-capacity, durable and scalable to support its current needs and future growth. It was also looking for a system that was non-proprietary, open standard and highly flexible so that several creative departments within the organisation could easily access and move content to and from its archive.

ITV is already using three Spectra tape libraries at other locations throughout the UK. As part of a new deployment, it has now installed two Spectra BlackPearl Converged Storage Systems and two T950 Tape Libraries at two separate data centres in Greenwich and Leeds. The Greenwich centre is utilising Spectra's equipment with five of IBM's TS1150 drives, while in Leeds it is using the vendor's systems with six LTO-7 tape drives.

Data are moved to and from the firm's archive automatically via *BlackPearl* using a variety of integrated partner applications and a Customer Created Client that ITV built through Spectra's developer programme. Data is also moved manually via the *BlackPearl Eon* browser.

The broadcaster also expects to deploy multiple new MAM (mobile application management) clients throughout several workflows in the future. Spectra says this will be made possible thanks to *BlackPearl's* multi-tenancy capability. These certified clients will write content to one location, and *BlackPearl* will replicate that content automatically to a second location through its *Advanced Bucket Management* feature.

**ITV is using Spectra Logic's BlackPearl Converged Storage Systems (left) and T950 Tape Libraries (right) at two separate data centres.**



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# West Yorkshire become first UK force to use new biometrics system

West Yorkshire Police (WYP) has gone live with real-time, automated, mobile biometrics technology from Motorola Solutions.

WYP is the first force in the country to implement the biometrics solution which will allow officers to check fingerprints against the national database records in less than a minute. It does this via handheld scanners that attach to an officer's phone which then accesses a new Biometric Services Gateway system.

Following a recent demonstration, the technology will now be rolled out to 250 frontline police officers in West Yorkshire.

Developed in a partnership between WYP and the Home Office, the system is available via the force's existing mobile devices and allows officers to access the live database from the field to get results in real time. It's claimed this creates a seamless workflow by removing the need to travel between the field and office or station to process information. As officers are able to obtain the right information about suspects quickly, accuracy is also said to be greatly improved.

"Almost instantly after deployment we found how valuable rapid biometric identification can be," says Ian Williams, WYP chief inspector and digital policing lead. "We have already been able to identify a seriously injured individual,

**Frontline officers can connect the new scanners to their existing mobile devices in order to access the national database.**



enabling medical staff to quickly offer accurate treatment and contact the family.

"In another case, we've identified a disqualified driver, summonsed him to court and seized his vehicle on the scene – all without the need to travel to the station and practically disable an Armed Response Vehicle for hours."

The new biometrics solution runs as part of the *Pronto* suite of applications from Motorola Solutions' subsidiary Airwave. The apps and the *Pronto* notebook are used by sixteen forces across the UK, and enable online or offline electronic data capture, use, storage and sharing of information.

Motorola adds that until recently, identifying or collecting data from individuals involved costly outdated devices and paper-based processes. ■

## Tailored Connectivity Services for Healthcare

Updata, part of Capita plc, is a pioneering connectivity services integrator.

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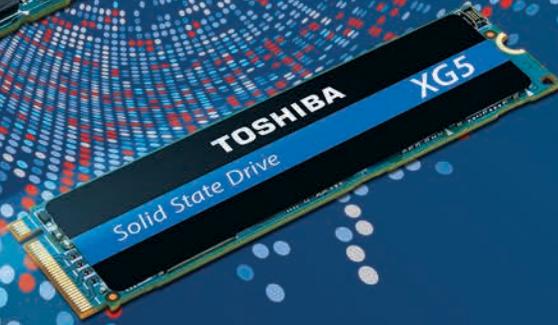
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## Ruckus brands wireless products for Dell

Ruckus Networks is providing branded wireless products to Dell EMC as part of a global OEM agreement. Ruckus – which is now part of UK-based global telecoms equipment specialist ARRIS – will supply APs, controllers, virtualised and data analytics assets, IoT and LTE products, as well as its *Cloudpath* secure network access software as Dell-branded solutions. The agreement is effective immediately and encompasses a range of sales, marketing and customer support programmes in international markets, including APAC, EMEA and the Americas. Ruckus president Dan Rabinovitsj says: “We view Dell EMC’s strength in storage and scalable computing platforms as critical to collaboration where complete bundled solutions are required to compete and win.” ■

## Onecom acquires True Telecom customer base

Onecom has acquired the entire fixed line and broadband customer base of True Telecom, which is currently in administration. Onecom CEO Darren Ridge says the move ends a “period of uncertainty” for True’s 3,000 customers who will now migrate to his firm. Hampshire-based Onecom says it manages more than 325,000 mobile connections, delivering business communication services and unified solutions across fixed line voice, connectivity and cloud computing. The firm adds that it is currently Vodafone UK’s largest partner. ■

## Jisc claims first with 400G network

Janet, the National Research and Education Network (NREN), now offers what’s described as “unprecedented” high capacity 400G wavelength connectivity. The NREN – which is already claimed to be the largest in Europe by volume of data carried – is now said to be one of the most digitally-advanced research and education networks globally in terms of scale, automation and intelligence. It uses Ciena’s 6500 packet-optical platform. Janet is operated by Jisc which is the education sector’s not-for-profit organisation for digital service and solutions. Jisc is also responsible for all .ac.uk and .gov.uk domains. ■

# Next Generation Data’s ‘mega’ data centre needs further expansion

Next Generation Data (NGD) will build out an additional 250,000ft<sup>2</sup> of capacity at its “mega” data centre campus near Cardiff. The company says this follows a number of new customer contracts worth in excess of £125m over the next five years, including agreements with several *Fortune 100* companies.

Work is already under way on the facility’s top floor to accommodate the new data halls. The company’s construction director Phil Smith says: “NGD’s 750,000ft<sup>2</sup> multi-tier facility has already reached 30 per cent occupancy with 31 data halls, but we still have abundant space and power available to future proof customer requirements as well as soak up new business demand. The largely pillar-free top floor is ideal for a variety of scalable data hall designs including private and shared facilities.”

The company adds that the scale and



NGD’s carrier-neutral Tier 3 facility in South Wales offers a gross internal area of 750,000ft<sup>2</sup> and can house up to 22,000 racks.

complexity of the project requires more than 500 construction workers to be permanently on site, creating further employment for locally-based contractors.

Since opening for business eight years ago, NGD claims it has already notched up more than 32MW of built space and remains Europe’s largest data centre campus. The firm says its “highly secure” facility features a vast 180MW renewably sourced power

capacity and multiple high-speed low-latency fibre network connections.

In 2016, NGD secured multimillion pound funding from Infravia Capital Partners to accelerate expansion. NGD chairperson Simon Taylor says: “[Our] industry leading 16-week build out timescales and the financial resources of our funding partner are enabling us to respond extremely quickly to global market opportunities.” ■

## Hybrid cabling system saves space for IP House

IP House is deploying HellermannTyton’s *RapidNet* hybrid cabling system throughout its new colo facility in London.

Made in Britain, *RapidNet* is a pre-terminated, pre-tested cabling infrastructure solution with a modular cassette-based design that is said to make installation “simple, fast and efficient”. It is also claimed to save space in data centres, as HellermannTyton sales director David Gagel explains: “The beauty of the hybrid approach is that customers can utilise fibre, copper or a combination of both to be terminated on the same IU unit. It means less space is required for connectivity infrastructure, which in turn leaves more room for customers and



RapidNet’s modular cassette-based design makes installation simple, fast and efficient.

revenue-generating IT equipment in the data centre whitespace.”

IP House partnered with UK-based global system integrator TwistedPair to create the backbone cabling system inside its data centre. According to Kevin Baylis, LV technical consultant at TwistedPair,

*RapidNet* allows changes to be made quickly in accordance with customers’ specific requirements. He adds that it also helps to futureproof the data centre against rapid technological change by utilising laser technology and improving the amount of fibre required to implement a high-speed network.

This latest deployment for IP House follows a number of partnership deals such as the one with Comtec Power last year (see *News*, December 2017). The UK-based startup aims to supply high-performance colo services from its data centre which is located on the edge of London’s financial district and is on schedule for a launch later this year. ■

## NHS Trust lays foundations for digital transformation

The Tavistock and Portman NHS Foundation Trust is overhauling its digital operations and preparing for future growth with the help of a new network solution from ANS Group.

Based in north west London at the Tavistock Centre and Portman Clinic, the trust provides medical training and education as well as mental health services at locations across South East England and beyond.

ANS says it is implementing a scalable Cisco LAN and has also signed a five-year,

fully managed service contract worth more than half a million pounds with the trust.

The new fully-managed network will underpin both student and patient record systems. ANS says it will help to speed up checking-in processes, as well as enabling remote patient care and trust-wide scheduling.

The company adds that its “resilient” network together with round-the-clock performance monitoring will support the healthcare organisation as it expands its services over the next five years and starts to

execute its digitally-enabled transformation strategy. It will also support the trust’s move to a new site.

Commenting on the partnership, David Wyndham-Lewis, director of transformation and technology at The Tavistock and Portman NHS Foundation Trust, says: “As a rapidly growing trust, we quickly identified the need to invest in state-of-the-art network infrastructure, in order to future-proof our operations and provide the best possible service to our patients and students.” ■

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## THE IOT CONNECTION

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

### Rittal helps firms join the fourth industrial revolution

Rittal reckons it has come up with the solution for companies who use machine-to-machine (M2M) communications to streamline manufacturing and therefore need real-time capabilities.

The company explains that sensors and actuators deployed in smart production systems continuously relay information on the status of processes and infrastructure. It says 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.

But Rittal adds that in order to make this possible, and to rapidly respond to events and anomalies, low latency between production and IT infrastructure is critical. According to the firm, a remote cloud data centre is unable to support these scenarios.

But with the advent of edge computing, Rittal has developed the *Edge Data Centre* which it describes as a turnkey, pre-configured solution based on standardised infrastructure. According to the company, its hardware can be implemented "rapidly and cost-efficiently", paving the way for Industry 4.0 applications.

The data centre comprises two Rittal TS IT racks along with corresponding modules for climate control, power distribution, UPS, fire suppression, monitoring and secure access. The firm says the units are available in various output classes and can be easily combined for rapid deployment. To safeguard critical components from heat, dust and dirt in industrial environments, the data centre can be implemented in a self-contained high-availability room.

"Combined with the as-a-service offering that we jointly provide with inNOVO Cloud, the *Edge Data Centre* is a complete, one-stop solution for enterprises of all sizes," says Clive Partridge, Rittal's technical manager for IT infrastructure.

As well as its IT-as-a-service platform provided by inNOVO Cloud, Rittal says it also offers private-cloud data centres in shipping containers. It says the containers are fully equipped with all key active components, such as servers, network connectivity and storage for immediate use.

### SAS sets up IoT division

Data analytics specialist SAS has created a new global division dedicated to IoT. The company says it will offer strategic industry expertise in manufacturing, energy and utilities, government, retail, insurance and healthcare.

SAS claims the IoT division will develop new partnerships and expand existing ones to bring together "best-in-class technology and expertise". For example in 2017, the company teamed up with Cisco to unveil their joint *Edge-to-Enterprise IoT Analytics Platform*. This is said to bring together all the hardware and software needed to analyse IoT data so customers do not need to build a platform from scratch. SAS adds that it brings similar benefits to customers through long-standing partnerships with Hewlett Packard Enterprise and Intel.

The central technology for the new IoT division is *Event Stream Processing*, SAS' software that is designed to analyse high-velocity data while it's still moving so that action can be taken immediately.

"The value of the IoT is in the information it produces about the world around us," says Peter Pugh-Jones, head of technology, SAS UK and Ireland. "SAS's new IoT division will provide companies with the tools and capabilities they need to analyse and understand that data. With SAS they'll be able to use the IoT to help make more intelligent decisions, introduce stronger AI and add value everywhere from production to supply chain to marketing and beyond."

Jason Mann, who was previously SAS' director of product management for industry solutions and IoT, will lead the new division as vice president of IoT.



The airport's 1,200 cloud-based screens now connect via a web browser from any operating system.

## Gatwick introduces cloud-based Flight Information System

Gatwick is said to have become the world's first major airport to introduce a cloud-based Flight Information Display System (FIDS).

While legacy FID systems require software to be loaded on a separate PC behind the screen to run them, Gatwick's 1,200 cloud-based screens now connect via a web browser from any operating system. It's claimed this takes up only 3Mbps of bandwidth which makes the new real-time system "extremely" fast and responsive to updates, a key benefit in times of disruption.

The new VisionAir FIDS was developed by AirportLabs and went live in mid-2017.

The system can run natively on smart TVs which is said to save on infrastructure and maintenance costs. It is also said to offer flexibility and can be run from a mobile device without the need for any software installed. Content can be managed collaboratively with other organisations, such as airlines and ground handlers, and different types of content can be hosted depending on requirements (disruption, weather, advertising, etc.).

Furthermore, unlike legacy FIDS, Gatwick says its new system is more robust to network

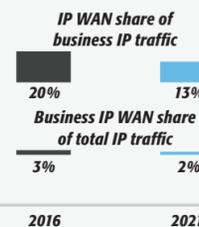
blips or power failures with mobile battery power and 4G backup available if required. It also includes a fully independent management interface that supports operation completely independent from any airport infrastructure or system if required.

The system also has awareness of screen positions with respect to the airport layout and can target appropriate messaging depending on the situation, and can control backlighting to help reduce energy consumption where possible.

"The solution we now have in place is resilient, flexible and low cost with highly optimised data transfer," says Gatwick CIO Cathal Corcoran. "We are transforming the way airport information is communicated and will soon allow passengers to interact with chatbots using Facebook Messenger, Whatsapp and other popular apps."

Corcoran adds that Gatwick is also exploring the use of the IoT for improving situational awareness and machine learning for accurately predicting flight departure times. Last year, the airport also became the world's first airport to deploy AR wayfinding (see online news at <https://tinyurl.com/y7wwxfj>).

## UK enterprise IP traffic will reach 1.5EB per month



Top: Thirteen per cent of UK business IP traffic is expected to be via WANs in 2021. Bottom: Cisco says business IP WAN traffic in the UK was 119PB per month in 2016, the equivalent of 40,752 DVDs per hour. But it forecasts that this will account for a smaller share of total IP traffic in the UK over the next few years.

SOURCE: CISCO GLOBAL CLOUD INDEX (2016-2021)

Driven by surging cloud applications, Cisco forecasts that global data centre traffic will reach 19.5ZB per year by 2021, up from 6.0ZB per year in 2016.

In the seventh edition of its annual *Global Cloud Index (GCI)* released in early February, the company predicts that over the next three years, 94 per cent of workloads and compute instances will be processed by cloud data centres while six per cent will be processed by traditional ones.

It adds that globally, the data stored in data centres will nearly quintuple by 2021 to reach 1.3ZB by 2021, up from 286EB in 2016. Big Data will represent 30 per cent of the stored data stored, a rise from 18 per cent in 2016.

For business users, the *GCI* forecasts that ERP, collaboration, analytics, and other digital enterprise applications will

represent the leading growth areas. More specifically in the UK, it is predicted that business IP traffic will grow three-fold to reach 1.5EB per month in 2021. Cisco says that's the equivalent of 379 million DVDs per month or 519,123 DVDs per hour.

The company goes on to forecast that business internet traffic in the UK will reach 1.3EB per month in 2021, up from 484PB per month in 2016. It adds that six per cent of enterprise internet traffic was mobile in 2016 and will grow to 10 per cent in 2021 to reach 134PB per month.

Business IP WAN traffic in the UK is expected to grow two-fold, rising from 119PB per month in 2016 to 198PB in 2021. Cisco says business IP WAN traffic was three per cent of total IP traffic in 2016 and will fall to two per cent in 2021.



On the right platform: Thule Group, whose brands also include Case Logic bags, was looking for greater flexibility, scalability and control over its IT estate.

## Thule takes its network to the Edge for SD-WAN

Sports and outdoor goods company Thule Group will use Interoute's SD-WAN platform to connect 30 of its sites in 14 countries.

"As we've moved to use more cloud and SaaS-based applications, we've seen increased bandwidth demand and heavy over-utilisation of our network," says Thule's IT director Anders Olsson. "We needed an underlying network that would allow us to achieve greater flexibility, scalability and control over our IT estate."

Interoute claims its *Edge SD-WAN* platform will help Thule cut costs, increase flexibility and bolster compliance thanks to its in-built security capabilities. By prioritising and optimising essential traffic at the network edge and actively directing it along the most efficient lowest latency routes, the company says *Edge* will optimise data flows to and from cloud-hosted applications, thereby improving performance for users.

"Thule Group can leverage our low-latency global cloud fabric to benefit from high bandwidth, WAN optimised access to applications in the data centre and various clouds, all securely meshed to their locations," says Mark Lewis, EVP products and development, Interoute.

Olsson adds that *Edge* has given his company a software defined network foundation that offers the flexibility needed to expand business: "It will enable us to grow and evolve without technology limitations," he says.

## 6DG give Co-op a 'data centre within a data centre'

Midcounties Co-operative has chosen Six Degrees to manage and host all of its IT services and data.

Warwickshire-headquartered Midcounties Co-operative has a diverse retail portfolio in the Midlands that includes food, healthcare, funeral care and the post office. It also offers energy, healthcare and childcare products which are heavily regulated.

Six Degrees now hosts all of the society's IT services, as well as the primary instance of its data, in its Birmingham South data centre. The company says security and management of the colocated data is also provided to ensure that Midcounties Co-operative meets compliance legislation.

Aaron Clayton, deputy CIO at the Midcounties Co-operative, says Six Degrees has the relevant certification to ensure that data is properly and legally, managed and protected. "Our partnership with them not only provides us with complete assurance, but also the freedom to focus on achieving our core business objectives."

Six Degrees says all of its data centres are ISO 27001 accredited and PCI DSS certified. According to Nick Marshall,



As well as its food retail business, Midcounties Co-operative also offers products from industries that are heavily regulated, such as energy and healthcare.

the firm's head of data and colocation, this gives Midcounties Co-operative the assurance that their data is secure.

He goes on to claim that a separate IT environment increases security for the

company. "Midcounties Co-operative has a dedicated pod contained in a branded, locked area – essentially its own data centre in its own space and environment, within the Six Degrees building."

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# Defending the public purse

Budget pressures mean public services must spend their funds wisely. Here's how some have updated their IT systems while keeping an eye on taxpayers' cash.

## City upgrades CCTV to aid public safety

The city of Salford, a metropolitan borough of Greater Manchester, includes the towns of Eccles, Swinton, Walkden and Irlam, and has a population of more than 245,000.

Salford City Council operates 120 public space CCTV cameras, covering eight neighbourhoods, which are monitored at a central control room in the civic centre. It is linked to police radios so staff can immediately send alerts about incidents, missing people or persons wanted for questioning and other intelligence. They also provided evidence for Operation Pandora, the council's crackdown on fly-tippers.

The council says information provided by its CCTV team has helped police make 177 arrests since April 2017.

In low light, cameras previously used by the council often failed to capture clear and

effective images. Then Salford's principal community safety officer, Stephen Kearney, was introduced to a different brand, Hikvision, when a house builder suggested using them to monitor a new development.

Kearney says he had not heard of the brand and was not sure about using untried and untested cameras: "So we didn't install them at the development. We put them on the rooftop of one of our corporate buildings, and the next day the CCTV operatives called me and said you've got to see this – these are the best cameras we've got." He also says, the cameras are more reliable, much cheaper and use less bandwidth, cutting the cost of storage and transmission.

After using two of Hikvision's *Darkfighter* cameras in Operation Pandora, further PTZ (pan-tilt-zoom) domes were installed taking the number to more than 30.

They were supplied by distributor ezCCTV and most are *DS-2DF8223I-AEL* PTZ network domes. Hikvision says that as well as excellent low-light performance, they have a 23X optical zoom day/night lens, HD1080p video images and functions which include face detection, intrusion detection, line crossing detection and audio exception.

The council recently started using the company's new *Darkfighter X* range which, says Hikvision, provides increased 25x zoom, plus a small number of *DS-*

*2CD4A85-IZS* 4K Ultra HD bullet cameras.

Kearney says: "The new cameras auto focus instantly and intelligently. Previous cameras might auto focus on an object rather than the person behind it. These cameras almost seem to know that you want to capture the person, not the object. They also zoom so fast you can now capture someone running or a moving vehicle's number plate."



## Paperwork in the cloud speeds justice

Paperwork was a burden at Swansea Civil and Family Justice Centre which hears child care cases for counties in southwest Wales: Bridgend, the City and County of Swansea, Carmarthenshire, Powys, Pembrokeshire, Ceredigion, Neath and Port Talbot.

For each hearing, all parties share case information in a "court bundle," traditionally a set of lever arch files, each containing around 350 sheets of paper. Each file must be paginated, indexed, copied, and distributed, usually by courier, to all the parties involved. Subsequent amendments or additions must then be managed for all copies and parties throughout the case.

The time and cost of administration were enormous. Missing or inconsistent pages could delay hearings and security was a concern because physical documents are easily lost or stolen.

South West Wales Shared Services Group worked together with the Swansea Civil and Family Justice Centre to find a solution. They chose Citrix *ShareFile* to create the cloud-based South Wales Shared Services Portal which now hosts millions of case documents.

Before the portal was introduced, the Swansea team were making a million photocopies per year; this figure has been reduced by 84 per cent. Immediacy has improved, says the justice centre, because any time there is an update to a case bundle, it is available straight away. Each party in the case always has the same view, and cases are no longer delayed because of disputes over mismatched files.

Encryption and permission controls have enabled Swansea Civil and Family Justice Centre to expand the roles that can view the paperwork. With the correct authorisations, independent social workers and medical experts can have access to appropriate individual documents, such as medical records. The portal team is also using features that discourage copying or printing to litigants in person.

Gawain Williams, Carmarthenshire County Council Childcare Solicitor, says the portal has changed the way he and his colleagues work. He says: "Because it sits in the cloud, it's available and up-to-date 24 hours a day. Barristers work in the middle of the night, judges read court papers on the weekends when they're not in hearings, so having access to a live, shared bundle is

extraordinarily important. Judges are already saying they don't need paper bundles so much. Instead of bringing 15 lever arch files to court, we can simply bring a laptop."

## Cameras keep watch in historic Manchester buildings

Two of Manchester's iconic buildings have been equipped with 200 video cameras in a long-term project which continues to be updated. The central library and the adjacent town hall extension are both grade II listed. The library was opened in 1934 by George V and the town hall extension was opened four years later by George VI.

Down the years the buildings – a total of 680,00 sq ft – have seen a varied assortment of disparate analog CCTV systems and mismatched access control hardware, both of which were failing. As part of a major revamp, Manchester City Council (MCC) put out a public tender for IP-based video surveillance and access control. It was won by Grantfen Fire & Security, based in Preston.

Grantfen installed Axis Communications' palm-sized *M3005-V* fixed dome cameras and Genetec's *Security Centre* video management system monitored from a control room in the town hall extension. With 35 TB of storage, video recordings can be kept for approximately 30 days.

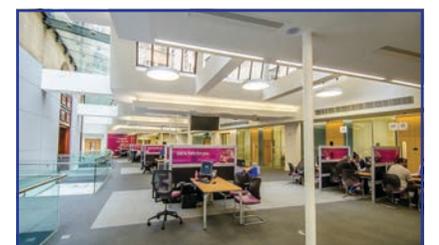
Today, MCC is running *Security Centre* 5.2, with Omnicast video surveillance and Synergis access control. Its facilities management team watches over access control, using Synergis to control main entrances, several doors and archive rooms. More access control devices have since been added, including 205 smart card readers, 22 wireless readers and 23 keypad readers, while three also have biometric readers for tighter security in more vulnerable locations.

Other systems were merged into *Security Centre*, including intrusion detection, fire alarm, building management, emergency lighting, flood and leak detection, lift alarms and SIP-enabled IP intercoms. Additionally, alarms would be relayed to *Security Centre* for such emergencies as water leakage in archive rooms, or over temperature in server rooms.

MCC operators use *Genetec Plan Manager*, a map-based interface that provides 2D or 3D navigation through the two buildings to help them pinpoint devices, pull up cameras, unlock doors, manage intercom and even respond directly to alarms from all third-party systems.

Detailed procedures on how to handle every type of alarm were added for regulatory compliance. For example, when a security guard acknowledges an event, an automatic pop-up box provides instructions on what steps have to be taken.

Similar systems are planned for the town hall, opened in 1887, which is closed until 2024 for £306m-worth of restoration work.







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# A healthier network

**With the new Health and Social Care Network now up and running, how easy is it for network managers to transition their services from N3 and what are the pain points that will need treatment? JAMES HAYES finds out.**

Even its most ardent admirers would likely acknowledge that the NHS has a mixed record for transformative ICT project delivery. But the rollout of the Health and Social Care Network (HSCN) shows that architects of public healthcare networking have gained much from experience.

The HSCN is the broadband infrastructure that replaces the NHS National Network – N3 – which had connected NHS England locations and 1.3 million employees since 2006. Its successor went live in April 2017, and user migration between the two systems is due to be completed by March 2019.

Designed and built by NHS Digital in partnership with suppliers and customers, the HSCN connects England's health and social care practices via connectivity procurable from a choice of suppliers unlike N3 which was owned/managed by BT.

In October 2017, dictation and clinical records management solutions firm Crescendo Systems became the first organisation to access the HSCN. Its connection came from MLL Telecom, one of the earliest of the 26 Consumer Network Service Providers (CNSPs) that have so far attained HSCN compliance.

Better operating expenditure management is one of the compelling factors of the HSCN *modus operandi*; network managers can apply critical evaluation to providers until they find one that offers the best value package for their requirements.

Darren Turner, general manager at Carelink – the healthcare managed infrastructure and network services business of Pikel – says the cost for HSCN connectivity is “significantly less” than for N3. “So organisations can now have the bandwidth they need at the price they can afford. With N3, we have had a single provider – BT – deliver network

services its own way to the healthcare sector. That has been a good fit for many organisations, but the needs of many others are [arguably] better served by small- or medium-sized providers that offer more customised services.”

Gareth Ricketts, healthcare lead at Udata Infrastructure (part of Capita), adds that the HSCN offers several other potential benefits: “For instance, new technologies unavailable under N3 will be now available to the NHS – such as G.Fast, FTTP-on-Demand, SD-WAN, and so forth. Also, NHS bodies will be able to engage more closely with their supplier to focus on meeting operational needs rather than just buying a circuit.”

According to NHS Digital, a requirement to provide value for users at all stages of adoption is designed into the HSCN specification.

N3 has been around for a long time during which network prices have dropped, and Sally Westwood, head of portfolio compliance/HSCN lead at KCOM, agrees that NHS organisations can now expect to make significant savings with the new network. “We have seen stats which suggest that organisations that have moved from N3 to HSCN have seen between 30 and 65 per cent savings.”

Of course, Westwood acknowledges that not every organisation may be able to achieve this. However, she also points out that HSCN compliance obligations represent a supplier overhead that will make it difficult for them to offer ‘commodity’ prices. “If healthcare [organisations] want to maximise their cost efficiencies, they must take opportunities to consolidate networks and challenge CNSPs to come-up with innovative ways to make that happen,” says Westwood.

Carelink's Turner is likely to concur here. He believes the HSCN presents a great opportunity for organisations to look at overall connectivity requirements, and assess whether there is benefit from consolidating under a single supplier. “Some CNSPs also provide connectivity to other government networks, so there are opportunities to reduce the number of suppliers that healthcare organisations have to deal with, and to negotiate on prices for packages of services.”

## The cost cutting network?

Many healthcare sector network managers whose trusts are still at HSCN adoption planning stage have yet to discover if the replacement service really will deliver performance gains and cost savings as promised. And as Udata's Ricketts further notes: “There has been no funding provision made in this process for cost of change, it being assumed that the derived cost saved from cheaper services will cover this shortfall.”

According to the CNSPs *Networking+* spoke to, although the new network should offer demonstrable benefits over the old, the switch from N3 to the HSCN is not necessarily a straightforward like-for-like transition. And while long-term operating expenditure savings may well accrue, in the shorter term HSCN adoption must be managed carefully to avoid costly service disruptions.

“Transitioning from one service provider to a one-to-many service providers environment is a transition that requires careful management,” warns Afshin Attari, director of public sector at Exponential-e. “It is important to understand legacy and future networking architectures to match

them to services and their topologies so that technical interdependencies are not broken by the transition. Like any transition, the plan needs to be robust and approached with the objective of doing everything possible to reduce risk.”

NHS England uses many legacy systems, so it is vital to understand the dependencies of these systems and how those dependencies will be impacted by network change. “Network managers need to follow a process of risk assessment, identifying users, remediation planning and knowledge onboarding. CNSPs will have many examples of transitions they have managed, lessons they have learnt. This is something that healthcare IT change leaders should tap into and utilise,” says Attari.

Indeed, the initial migration phase will probably incur upfront capital expenditure costs. Ian Wilcox, business development director/health at MLL Telecom, says organisations must undergo exacting planning and preparation for the service swap, adding: “In order to move to HSCN, organisations have to procure new connectivity services from an accredited CNSP. Generally, this will mean that new circuits and equipment need to be installed.”

While this may provide a straightforward fallback to N3 should the migration experience problems, others also agree that it entails additional investment in ICT infrastructure. For instance, Carelink's Turner says new routers will normally be required for a new connection that, on average, will cost a “few thousand” pounds. Network managers who, for whatever reason, miss their migration window, will then have to decide if they want (or are able) to continue with other aspects of the programme or leave the new routers in their boxes *pro tem*.

UKFast announced in early February 2018 that it had been awarded stage one compliance to provide services through the HSCN. As a result, the hosting provider says it is the only provider to offer HSCN connectivity directly from a government-approved data centre. The company's CEO, Lawrence Jones, says that as NHS organisations move to more web-based services with more people trying to connect to the HSCN, all the infrastructure has to be in place and it has to be able to scale at a moment's notice. But he puts a more positive spin on the issue when he says: "[This] is not only a convenient moment for NHS services to upgrade their enterprise communications, but it's a reminder that legacy hardware may not have the capability to deal with the increasing demands of NHS users on the new network."

And speaking from the perspective of a CNSP, Ricketts says changing out one network to another is "business as usual" with few extra challenges compared to any other public sector body. "In any transition, minimising disruption is down to good project management, and CNSPs have much expertise in this area."

MLL Telecom's Wilcox adds that NHS Digital recommends carrying out tests to ensure applications that were accessed over N3 can still be accessed over the HSCN. "If this runs smoothly, then users experience a short break in service, after which they should see no functional change. We see savings and performance improvement over N3. Annual rental is reduced, and any one-off installation costs can be amortised if capital budget is not available, which would still offer a reduced rental."

KCOM's Westwood goes on to point out that according to NHS Digital, in order to transition fully from N3 to HSCN

by August 2020, 3.5 migrations will need to happen every hour of every working day for the next two years. She says there is currently a "trickle" of migrations coming through, but the expectation is that this will become a torrent over the next six months. "NHS Digital can only handle a set period of migrations each day so during the migration peak getting a slot will be tricky – especially as the number of slots available is locked four months in advance."

Where possible, Wilcox advises NHS network managers to try and keep their HSCN architecture similar to their N3 setup. He also says that while there is a tendency to want out-of-hours migrations at key sites, in MLL Telecom's experience it is actually better to do this during the working day – even if this involves a short break in service. "Any issues with user access to N3 systems will be picked up immediately and can be resolved while IT staff and CNSP engineers are on-site," says Wilcox.

### Don't race to the bottom

Exponential-e believes that N3 to HSCN transition practicalities are not necessarily the main issue facing IT change leaders within UK healthcare organisations. "It is more the complexity that presents a challenge," says Attari. He warns that the sheer volume of circuits that need to be switched is where the potential for a few technical 'gotchas' come in. "It's important to understand the logistics of the transition and understand the technical checkpoints that need to be considered to assure continuity of service. With an estimated 33,000 circuits to be switched over the next two years, there is only a small window when change can be

enacted. If an allotted window is missed, another won't open again for some time."

Jones is likely to agree here and says that because the HSCN is a new network, everybody wanting to be hooked-up has to have a new connection. "There are around 15,000 current connections to N3 that need to be transitioned to the new network, which almost means digging up the street and laying new fibre. That's why the major pain, as we see it, will be in the actual wait to get HSCN-connected."

All that could mean that an NHS trust's move to the HSCN is delayed, and value gains are deferred.

For Chris Wade, commercial director at The Networking People (TNP), the biggest 'pain point' for many NHS consumers will be in deciding on the overall network strategy. "The choice of delivering HSCN on a site-by-site basis, or centrally to a single point, and using a traditional WAN to deliver it, will be difficult for many. This is also confusing for many network managers when faced with the choices offered by SD-WAN, as this is not a choice that has previously been available for them."

Ricketts also advises network managers to quickly become familiar with HSCN procurement procedures so that they can avoid the need to pay costly, third-party advisors for help with that aspect of the transition. "The N3 procurement model of purchasing a limited number of fixed connectivity services through the N3 catalogue meant NHS bodies' procurement departments have little or no experience of using government tendering processes."

This lack of experience has led to NHS bodies employing external consultants to create tenders, followed by a race to the bottom as cost is the only differentiator. Ricketts warns: "This appears to be saving

the NHS monies. However, it could lead to network failure with serious operational implications due to the type of low-grade services offered by some CNSPs."

TNP continues by saying organisations need to consider the N3-HSCN migration in terms of their overall connectivity requirements that will include current N3 services, ISP, WAN, and cloud services. "NHS network managers should not assume that they will consume HSCN connectivity/services in the same way that they have consumed N3 connectivity/services," says Wade. "This means that the whole landscape in terms of applications and overlay services is likely to change, as the cost of bandwidth to HSCN reduces due to it moving towards being a commodity service. [NHS] organisations could, therefore, use it as an opportunity to streamline, cost-reduce, and improve the network connectivity they currently have."

### Is it safe?

Given recent NHS cyber attacks (notably *WannaCry* in May 2017) security will be a high concern for any HSCN user organisation. Despite remedial action taken at many trusts post-*WannaCry*, a Public Accounts Committee was recently told that 200 of them fell short of the *Cyber Essentials Plus* certification when subjected to on-site assessments by regulators from the Quality Care Commission.

According to KCOM's Westwood, the HSCN is built on the CAS(T) industry security standard which is designed to provide secure telecoms for government and related organisations, and is run by CESG of the National Cyber Security Centre.

She says: "This is a similar approach to that for the Public Services Network



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(PSN), but HSCN has additional features – for example, a data security centre and advanced network monitoring for internet-based traffic. It also has a network analytics service which analyses network traffic data to detect and investigate potential security attacks. So HSCN is secure. However, in today's environment we still recommend that healthcare organisations consider encryption at the application level, in line with government Cyber Essentials guidelines."

Turner adds that security was always a big part of N3 and remains significant to the compliance process for the HSCN. "CNSPs must provide evidence of their information security practices which have to meet all relevant NHS/UK public sector security standards. These are ongoing requirements for CNSPs that will evolve to incorporate any relevant new initiatives, and will always be a strong focus of the continuing compliance process."

MLL Telecom's Wilcox also points out that the cyber security management obligations on CNSPs mean that potential threats can be identified early and addressed rapidly across the whole HSCN supply chain. But he goes on to warn that this should not be seen as totally secure,

## How the new network will mean new suppliers

The HSCN was tested at several NHS pilot sites over a three-month period before going live. Over the winter, the first organisations have been going through the process of going live with the HSCN, and include Moorfields Eye Hospital NHS Foundation Trust, West Midlands Ambulance Service, and Devon Doctors.

NHS Digital and Crown Commercial Service (CCS is the agency and trading fund of the Cabinet Office tasked with improvement of government commercial and procurement activity) worked to develop the Dynamic Purching System (DPS – a.k.a. RM3825) for aggregated procurement of HSCN connectivity. All Consumer Network Service Providers (CNSPs) must be RM3825 registered.

This is the first attempt by CCS to use a DPS instead of a traditional network services framework for connectivity contracts. Michael Bowyer, innovation director at Innopsis (pictured), says: "Previously, if a supplier was not successful in securing a connectivity framework contract, they remained effectively locked-out as a prime contractor until the framework expired or a new one re-assigned – typically a barrier for some three years.

"The DPS for HSCN is innovative in the simple principle that new suppliers can join the DPS when they are ready or can meet the qualification requirements, and upon application, assuming they meet the published criteria, they can join in around three weeks."

Once the first batch of large HSCN procurements are completed, Bowyer believes we will see a wave of new technology and connectivity solutions being proposed.



and so each organisation needs to assess the risks and put in place the protection needed to mitigate possible threats. "HSCN is a private network domain with defined boundaries, and there are measures in place to police this domain and protect the boundaries. Simplistically put, it's more secure than the internet, and less secure than PSN."

Exponential-e's Attari supports this view when he says that the HSCN is not "quantifiably" more secure than comparable networks and would not, for example, protect the NHS from another ransomware attack. But unlike N3, he says the new network is much easier to overlay services over. "As a result, organisations can create a proactive security posture. More importantly, the HSCN is designed to evolve – it offers more compatibility to aggregate the required technologies so that

healthcare organisations have a holistic view of cyber threats."

## The "one pipe" to bind them all

Innopsis is the industry association for suppliers that provide network services to public sector bodies. It worked with NHS Digital to create the obligations framework for the HSCN and says that at its heart, the new network is an open transport network designed around a set of operating standards and principles.

"The restrictions of the past – network availability and type – have been removed, and the only consideration now really needs to be about information assurance of the application using HSCN," says the association's innovation director Michael

Bowyer. "I think of HSCN as the Apple app store for connectivity. Suppliers and consumers are free (for a fee) to create or consume services, and as long as they are compatible with the HSCN standards, then they will work."

Ultimately, the HSCN will enable NHS organisations to implement digital technologies that will benefit both staff and patients alike.

"Simple things like ensuring data is in the right place at the right time across multiple devices and in a secure fashion, will improve the patient journey as the NHS re-engineers itself for the digital age," says Attari. "These benefits come from the ability to deliver multiple services over 'one pipe'. Empowering different trusts to securely aggregate their connectivity requirements brings not only extra agility, but also the ability to realise significant cost savings." ■

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off-the-shelf: surveillance cameras

# Well worth watching

Surveillance equipment to help improve security and safety in public and private environments.

In a bid to appeal to those with limited budgets, **Axis Communications** has brought out two thermal imaging cameras in its new *P-Line* range. It says they are cost effective for users such as schools, care homes and independent retailers with small- to mid-sized systems.

Both new models, says Axis, allow for intrusion detection and incident identification without compromising individuals' identities.

The new *Axis P1280-E* (pictured) is an indoor/outdoor camera with a flexible form factor that, it says, allows the sensor unit to be located in limited space. It has mounting accessories for wall, ceiling or recessed installations. The *Axis P1290* is an indoor camera in a dome casing for discretion.

Both have built in analytics, such as *Axis Video Motion Detection*, that can send an alert when it detects moving objects in a predefined area. And, says the company, they support *Axis Camera Application Platform*, which is compatible

with a range of third-party applications.

Axis says that where privacy is paramount – for example, schools and care homes – thermal imaging detects incidents without revealing personal details of those in the image. They can trigger alerts or alarms in response to patient or resident falls, allowing staff to take action.

In care homes, it says, staff can observe residents remotely, so that staff can work more efficiently, and patients and residents can rest undisturbed. In the same way, Axis says, thermal imaging can be used to observe student movements throughout the school, without invading privacy. And they can identify unauthorised access at any time.

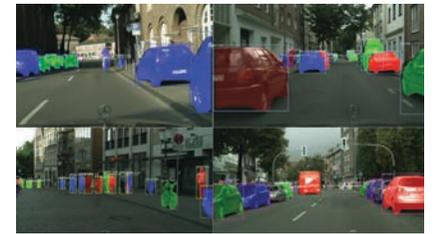


Two 28-year-olds, Mohammad Rashid Khan and Boris Ploix, say they can cut false alarms from surveillance cameras by up to 50 per cent. Their company, **Calipsa**, based in Charing Cross, offers a service – via the

cloud or on the client's premises – which analyses video in real time. Typical uses, says the company, include monitoring traffic flows, congestion and enforcement, traffic surveys and incident detection, transport

hubs, road accidents and public disorder. Using IP, the service takes the feed from surveillance cameras and, says Calipsa, applies software to intercept false alarms in seconds, passing only genuine alarms to operators at monitoring stations.

It says algorithms quickly process and analyse video feeds in real time to detect humans, vehicles or animals at the scene, filter out false alarms and detect real alarms. False alarms, says the company, can be triggered by staff on site when a system is still armed, environmental issues, such as trees blowing in the wind and even insects on the camera.



Calipsa says that, apart from human operators deciding the validity of an alarm, camera owners traditionally use either anti-dither settings – setting the length of the motion to be detected – and masking, used to ignore certain parts of the camera view.

New features have been added with the introduction of the latest in **IndigoVision's** specialised camera range, the *BX Thermal Bullet Camera*.

With a VOx (vanadium oxide) uncooled thermal sensor and athermalized focus free lens, the company says the new model is suited to extremes of temperature inside and outdoors. And it says that the camera's high thermal sensitivity (<40mK) captures more image details and accurate temperature measurements over long distances, making it suitable for uses from perimeter detection to process or machinery monitoring.

The company says that the built-in video and thermal analytics can detect maximum, minimum or temperature differences, alerting users when an abnormality is detected.

Other new features claimed by IndigoVision include: resolution options of 336x256 or 640x512 through VOx uncooled thermal sensors; thermal sensitivity of <40mK with an athermalized



focus free lens for accurate temperature measurements over long distances; thermal analytics with a temperature measurement range of -40°C to +550°C with hot trace and fire warning; advanced analytics for motion detection, hooded, tripwire, intrusion and object abandoned; and an operating range of -40°C to +60°C.

In addition, says IndigoVision, the BX camera is rated to IP67, making it vandal resistant and suitable for internal/external installations; it can connect with the company's own control centre, or any third-party system, using ONVIF's (Open Network Video Interface Forum) Profile S standard.

Stainless steel cameras have been introduced by **Oncam** which says they are resistant to high pressure water jets, dust and vandalism. They offer a 360-degree video stream and are available in 5MP and 12MP versions.

The company says the *Revolution IP* cameras are designed for users who need resilience and must comply with strict regulations, such as those in food processing, industrial and chemical plants, vehicle wash stations and ports.

Powered by an Ethernet connection or 12V DC, Oncam says that, unlike PTZ (pan-tilt-zoom) cameras, the *Revolution* models are silent with no motors or gears and can replace two or more conventional fixed cameras.

Both can be fitted to ceilings – at a minimum height of 2m – or walls and, Oncam suggests, can also be mounted on a flat surface for uses such as inspecting systems or viewing the undersides of



vehicles. Pendant mounting is also available.

The fisheye lens produces a spherical image which, the company says, can be converted by dewarping software into a flat view. In addition, software can also convert the image into a double 180-degree panoramic view.

Oncam says the cameras can be networked with other cameras, as well as other technologies, and images can also be viewed via the company's free mobile app, *OnVu360*.

Big claims are made by **Redvision** for its new *Volant* dome cameras, available in IP and analogue models. It says they are the fastest, quietest and most accurate, rugged PTZ (point-tilt-zoom) cameras in today's security industry.

Redvision says that *Volant* shares features with the company's *X-Series PTZ* cameras. These, it says, include a die-cast aluminium body and flat optically-correct, toughened glass camera window with a silicon wiper for outdoor use. The company says a unique encoder interface means *Volant* and *X-Series* models work seamlessly on the same control platforms with an identical, Redvision web interface.

Redvision says the *Sony Starvis 30x* camera module achieves exceptional, low-light performance. *Volant*, it says, includes integrated dual-adaptive IR and white light LED illuminators in a ring around the camera window to provide optimal lighting in any field of view and effective

up to 150m in darkness. Redvision says it has adopted the preset, short-cut control from the *X-Series* to allow fast access to white light for immediate target illumination and colour verification.

The company says Infinity direct drive, brushless DC motors mean that *Volant* is fast, accurate and silent with flexible, continuous rotation in pan and tilt. *Volant*, it claims, can pan at 360° per second to a pre-set and can move extremely slowly to track a target or person at 300m.





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## Average earnings rising – but not for infosec pros

The average salary for permanent IT professionals across five key disciplines was £56,523 at the end of last year, according to the *Tech Cities Job Watch Q4 2017* report from Experis.

The company, which claims to be the largest IT recruitment specialist in Europe, says the five disciplines its report focuses on are Big Data, cloud, IT security, mobile, and web development. The report found that the average for the final quarter of 2017 had grown by eight per cent since Q4 2016, and that each discipline had also witnessed an increase in pay over this period, apart from mobile which remained static.

Experis says average salaries for permanent security professionals increased by four per cent year-on-year to stand at £60,004 for Q417. But the firm notes that this is still much lower than the average salary of £70,945 for Big Data specialists.

Data in the *Tech Cities Job Watch* report is based on ten UK cities that are said to be rapidly developing as technology cluster hubs: London, Birmingham, Brighton, Bristol, Cambridge, Edinburgh, Glasgow, Leeds, Manchester and Newcastle. London continued to be the highest paying city offering an average salary of £65,179 and also saw a year-on-year growth of four per cent.

However, the news is not so good for contractors. Unlike the permanent market, Experis says average day rates across all the cities and disciplines fell, both year-on-year and since Q415, by seven and one per cent respectively. As a result, the average day rate offered was £419.

The company adds that day rates for security professionals have surprisingly experienced the biggest decline out of the five disciplines, offering £423 in Q417. As a result, it is now behind Big Data (£497) and Cloud (£447), ranking third as the highest paying discipline.

Whilst London was the highest paying city for security contractors in Q415 with an average day rate of £500, that has since dropped by 13 per cent to £433. As a result, the capital is now the third highest paying city behind Glasgow (£480) and Manchester (£475).

Experis believes this trend is the result of businesses shifting the way they manage IT security. It says organisations are increasingly hiring contractors to plug short-term skills gaps and allocating them to lower value, higher volume security tasks, instead of managing large-scale, specialist projects.

## Tech sector sees jobs boom

The number of jobs advertised in the technology sector is booming as hiring managers continue to increase spending on new recruits and fight to secure the best talent, according to Reed Technology.

In its analysis of more than seven million jobs posted from 2015 to 2017, the recruitment firm said growth in the tech sector grew by 12 per cent and was second only to engineering (16 per cent).

Andy Gardner, senior divisional director of Reed Technology, believes technology is in the “privileged position” of spearheading the so-called “fourth industrial revolution” and that those within it are “perfectly positioned” to secure long and successful careers for themselves.

“Within the UK tech industry there is a climate of innovation and candidates know that where there is change there

is always opportunity,” says Gardner. “Many companies are looking to invest in people with the skills needed to influence and adapt to this new order.”

But he goes on to warn that tech professionals that truly thrive will need to be more than just skilled analysts and developers. “They will need to focus upon business partnering and developing their commercial value to a company by having the ability to give strong commercial advice from a financial perspective.”

Reed also found that advertised salaries in the sector grew by 1.6 per cent in 2017, and that roles for Java developers have witnessed a nine per cent hike in salary since last year. This was followed by a seven per cent increase for BI developers, business analysts and desktop support staff, while network engineers have gained a six per cent jump in their pay.

## IN BRIEF...

■ The latest Robert Walters *Salary Survey* reveals that earnings for cyber security specialists will increase seven per cent this year, the highest forecasted rise among IT professionals. It also said developers and infrastructure specialists will see salary rises of three per cent. The recruitment firm warned that with salaries in the IT industry already at “high levels”, employers should consider other ways in which to attract and retain top talent, remote working and flexible hours.

■ Excel Networking Solutions has launched the fourth edition of the *Excel Encyclopaedia*. As well as updated content, the latest edition includes four new chapters that focus on new products and services from the company, and a new section dedicated to the Construction

Products Regulation. The encyclopaedia is available primarily as an electronic publication, featuring hyperlinks, buttons and videos throughout each chapter to link to various areas of the Excel website, social media channels and useful documentation. [encyclopaedia@excel-networking.com](mailto:encyclopaedia@excel-networking.com)

■ The work-life balance of UK IT pros is lagging behind that of their US counterparts, says PagerDuty. In a survey of more than 800 IT workers across the UK, the US and Australia, the digital operations management specialist found that 36 per cent of US respondents said their work-life balance was “excellent” versus just 15 per cent in the UK and 16 per cent in Australia. However, 52 per cent in the UK said a “fair” or “poor” work-life balance affected their ability to manage stress – that’s compared to 68 per cent in the US and 64 per cent in Australia.

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