

Seeing the light

THE LATEST DEVELOPMENTS IN
OPTICAL FIBRE STANDARDISATION

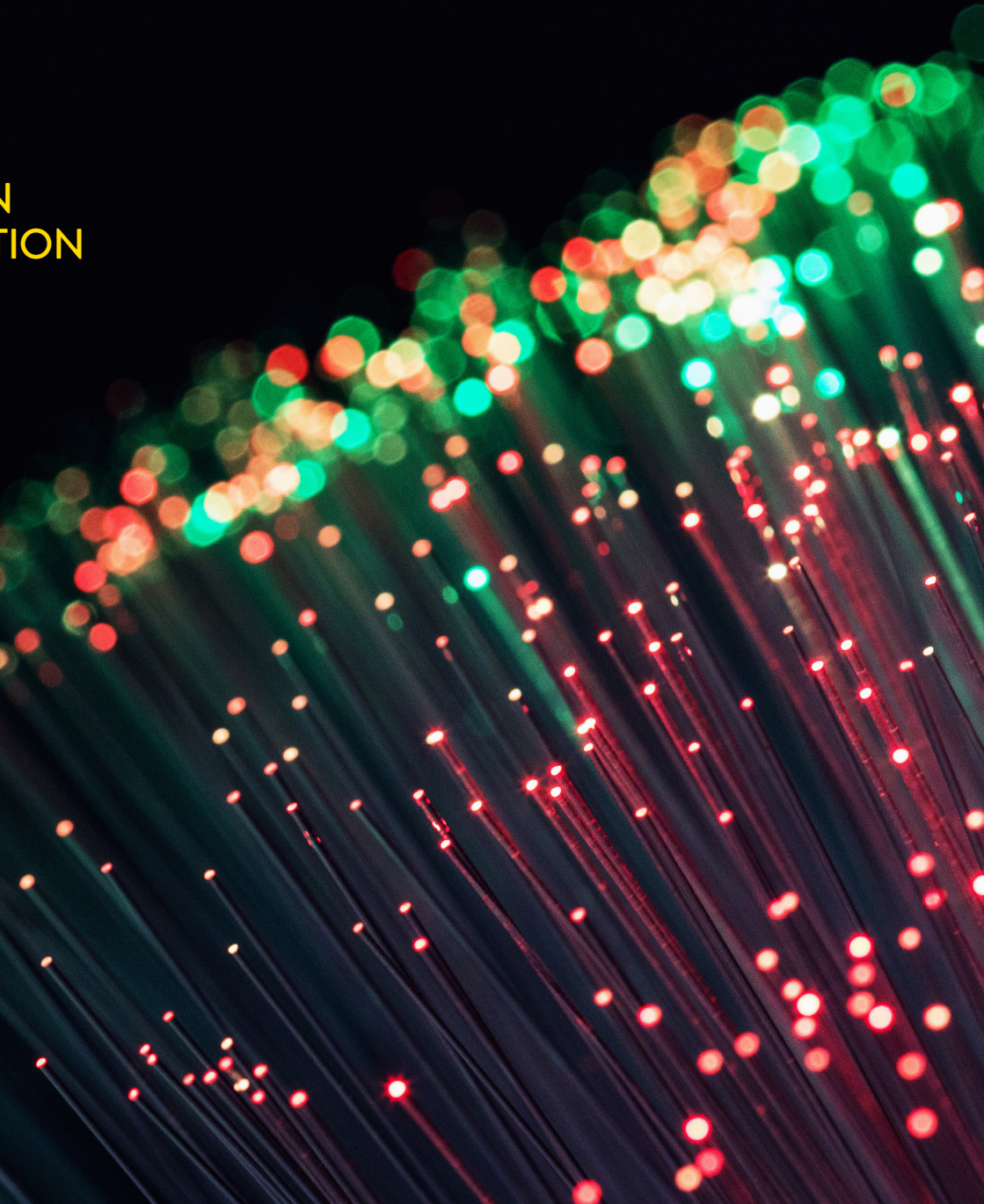
Knowledge is power

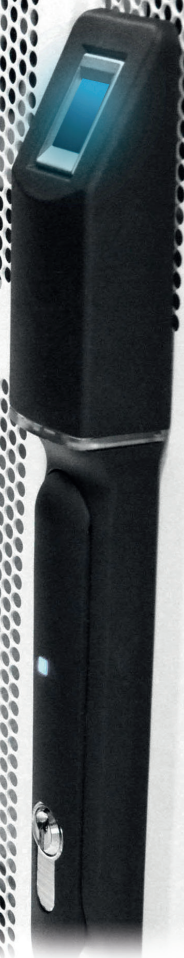
WHY THE INDUSTRY
NEEDS TO START
TAKING PROFESSIONAL
DEVELOPMENT SERIOUSLY

Getting the third degree

USING THIRD-PARTY
CERTIFICATION TO
EVALUATE A NETWORK
CABLING SYSTEM

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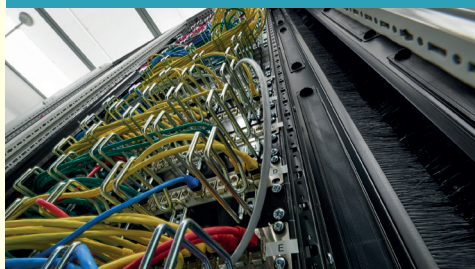
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Stating the facts

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Given its obvious importance to uptime in data centres and enterprise LANs, structured cabling is far more than simply a commodity item. There is an old adage that warns against building a foundation on shifting sand and simply building a network infrastructure using poor quality cabling is akin to doing just that.

So when evaluating a cabling system it makes good sense to go beyond the initial price and look at what it can offer in terms of performance and reliability. While manufacturers will do all they can to highlight the features and benefits of their offerings, it is vital for the customer to ask the right questions and verify any performance claims. Perhaps the most immediate way to do this is to find out if a product has been certified by a third-party testing organisation.

In this issue's Question Time, we've asked a panel of experts to examine the importance of third-party certification when evaluating a network cabling system and whether it can guarantee installed performance and compliance to specific standards. You can read their responses by [CLICKING HERE](#).

Staying on the cabling theme, the way that optical fibre technology is designed, specified and utilised continues apace, so Mike Gilmore of the FIA explains the latest standards in this area. [CLICK HERE](#) to read his excellent overview.

Never afraid to tell it like it is, Andrew Stevens of CNet Training is a longstanding champion of training and skills development. However, he believes it's time for the industry to get truly serious about its commitment to professional development and you can read his thoughts on the subject by [CLICKING HERE](#).

With so much more besides, I hope you enjoy this issue of Inside_Networks. Don't forget that if you'd like to comment on any of these subjects, or anything else to do with enterprise and data centre network infrastructures, I'd be delighted to hear from you.

Rob Shepherd

Editor



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Research finds cloud infrastructure is vital to digital transformation

Over a quarter (28 per cent) of businesses now have a fully formed digital transformation strategy in place, and over half (54 per cent) are in the process of implementing one, according to the latest research from Cloud Industry Forum (CIF). Critically, the cloud is seen as either very important or vital to organisations' digital strategies to 82 per cent of respondents.

The research, which was conducted by Vanson Bourne and surveyed UK-based IT and business decision makers, sought to understand how they were exploiting cloud and other next generation technologies, and the barriers standing in the way of adoption.

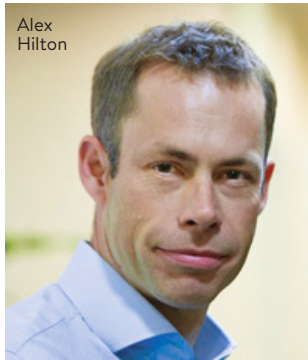
Almost all of the respondents (98 per cent) said that their digital transformation strategy is at least fairly clearly defined, with just over a third (34 per cent) having

full clarity. When asked if their organisation is doing enough to become fully digitised 28 per cent felt they were doing more

than enough, and a further 56 per cent stated that they were doing just enough. There is still work to be done with a lack of skills (40 per cent) and lack of budget (38 per cent) being cited as key hinderances to further and deeper digital transformation.

Alex Hilton, CEO at the Cloud Industry Forum, stated, 'We are beginning to

see greater clarity in the way leaders are formulating their strategies, but it does not mean it is time to rest on our laurels. There is still much that businesses can do to speed up processes, build efficiency and convince all leaders that digital is the way to go. The cloud's role in all of this remains vital, given its emphasis on flexibility at a time when these qualities are more important than ever.'



Alex Hilton

OpenUK announces new board members

OpenUK, which advocates for the use and development of open technology and associated services, has announced its new board. Andrew Katz, Neil McGovern, Phil Weir, Dawn Foster, Ian Burgess, Laura James, John Laban, Matt Jarvis, Rob Taylor, Mike Smith, Terence Eden join former chairman, Stuart Mackintosh, and

board adviser, Jeni Tennison.

Amanda Brock, CEO at OpenUK, said, 'We have broadened out the remit of our organisation and emerging from a chrysalis, will see the organisation metamorphosise into the first organisation globally to tackle head-on the need to bring together communities in open source software, open hardware and open data. If any communities understand how to collaborate it's these three and they are doing so through OpenUK.'



Amanda Brock

47.6 per cent of companies 'wouldn't know' if their organisation had suffered a cyberattack

Almost half of respondents to the latest Twitter poll run by Infosecurity Europe admit they would be completely unaware if a cyber breach occurred in their organisation. The poll was designed to explore incident response, an area that has come under recent scrutiny following Travellex's response to its New Year's Eve cyberattack, which left many of its systems down and impacted travel currency sales.

In answer to the question 'If a cyber breach occurred, how quickly could you discover it?' 31.5 per cent of respondents said they would discover it immediately, 14.3 per cent within 30 days, and 6.6 per cent within 200 days. However, 47.6 per cent conceded they simply would not know.

According to Maxine Holt, research director at Ovum, this reflects a widespread issue. She said, 'Discovering a breach well after the event is usual. Uncovering breaches is not easy, but

proactive threat hunting is an approach being increasingly used by organisations. Regularly scanning environments to look for anomalies and unexpected activity is useful, but it can be difficult to deal with the number of resulting alerts. Ultimately, effective cyber hygiene involves having layers of security to prevent, detect and respond to incidents and breaches.'



SMEs must focus on basic cybersecurity hygiene

Many small to medium sized enterprises (SMEs) are still failing to implement basic protection and controls in their business, leaving them vulnerable to what should be trivial and easily prevented attacks. In 2020, SMEs should focus on fundamental cybersecurity hygiene, which represents the best return on investment for small organisation wanting to strengthen their defences, according to Memset.

Thomas Owen, head of security at



Memset commented, 'Whether they lack skills, budget or time, or are limited by legacy design choices or customer requirements, SMEs can often be extremely vulnerable to attacks at scale. Our practical advice comes down to strong non-default passwords, implementing 2FA

on critical logins, regular patching, having a firewall and putting malware prevention in place. If those controls aren't ready, management might need to rethink their priorities, as the risks are increasing at an unsustainable rate.'

UKCloud's State of Cloud Adoption survey reveals reasons why public sector organisations are turning to multi-cloud

UKCloud has announced the results of a survey of more than 300 senior IT professionals and business leaders that reveals the key challenges and issues that are affecting cloud adoption.

The UK government adopted a Cloud First policy in 2013, which signalled a significant shift from traditional IT solutions to more agile, scalable and cost effective cloud solutions that enable the broader digital transformation agenda. But while there has been some successful use of cloud, the majority of public sector IT has not yet made the shift. Last year, Crown Commercial Service (CCS) and the Government Digital Service (GDS) commenced a review of the Cloud First policy, whilst organisations such as NHSX

and Defence Digital were formed to harness innovative technologies to drive better public services.

'We have been monitoring the adoption of cloud based services across the UK for the past 10 years,' said Alex Hilton, chief executive at the Cloud Industry Forum. 'We have seen unprecedented change take place in that time, with many companies now realising the potential of cloud services helping them fulfil their digital transformation goals.'

He added, 'These journeys may have started a long time ago, but they are far from over – rapidly evolving business challenges mean that diversity and collaboration are necessary to move forward.'

Almost half of IT businesses believe Brexit will have a long-term positive impact

A new study into how businesses in the IT sector are prepared for Brexit has revealed that 40 per cent of businesses believe the process of exiting the EU is currently having a positive impact on their business, while 33 per cent feel it hasn't had any impact at all.

Commissioned by Huthwaite International, the report shows that post-Brexit business prospects remain positive, with 47 per cent of businesses believing their growth potential will prosper post-Brexit, regardless of the outcome.

When looking at what worries businesses most about the UK leaving the EU, rises in prices, changes to laws and legislation and uncertainty around trade agreements ranked as the highest concerns. Improving negotiation skills also

ranked as the biggest priority amongst businesses before the Brexit deadline, with many sighting it to be a key priority when it came to safeguarding profits and reducing overheads.



Tony Hughes

Tony Hughes, CEO at Huthwaite International, said, 'Gaining the skillset and knowledge to survive this economic uncertainty is vital for business success. The UK is packed with ambitious and prosperous companies that should flourish

regardless of economic uncertainty, however, the importance of obtaining the core skillsets to flourish shouldn't be underestimated.'

Wi-Fi Alliance surpasses 50,000 Wi-Fi Certified products

Wi-Fi Alliance has surpassed more than 50,000 Wi-Fi Certified products. Wi-Fi Certified is an internationally recognised seal of approval designating products including routers, televisions, smartphones, wearables, and smart appliances that deliver the greatest consumer satisfaction.

Among the companies that completed the most Wi-Fi certifications in 2019 are Huawei Technologies, Lennar Ventures, LG Electronics, Panasonic Corporation, Samsung Electronics, Sony Corporation, and Toyota Motor Corporation. The range of companies with Wi-Fi certifications to address new home construction, automotive, smart home, and consumer

electronics demonstrates the wide range of industries that emphasize interoperability as a foundation for delivering the best user experience for Wi-Fi use cases and applications.



‘Wi-Fi Alliance is committed to ensuring Wi-Fi devices and networks provide users the interoperability, security, and reliability they have come to expect,’ said Edgar Figueroa, president and CEO of Wi-Fi Alliance. ‘The benefits from Wi-Fi Certified devices set these products and networks

apart by undergoing rigorous testing to ensure they meet the highest Wi-Fi standards.’

NEWS IN BRIEF

The IDC MarketScape has recognised Equinix as a leader in its Worldwide Colocation and Interconnection Services 2019-2020 vendor assessment. This assessment covers nine key colocation service providers worldwide and is based on current and future capabilities, with a view of presenting a comprehensive analysis of enterprise requirements.

Giovanni Di Filippo has joined Lenovo Data Center Group (DCG) as president Europe Middle East and Africa (EMEA) to drive the business in this region and build on relationships with data centre partners and customers.

LogicMonitor has acquired Unomaly. The acquisition accelerates LogicMonitor’s roadmap and will help IT teams quickly gain the intelligent insights needed to determine when and how to embrace automation in order to resolve IT infrastructure issues.

Kao Data has appointed Spencer Lamb to spearhead the company’s growth strategy, as vice president of sales and marketing.

France-IX has reached the milestone of 25 active reseller partners, which are collectively responsible for connecting nearly 80 members from around the world to the Paris and Marseille-based internet exchange platform.

Radware’s annual Global Application and Network Security report shows that only 26 per cent of carriers are well prepared for 5G deployment.



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Blowing your mind

Hi Rob

Air blown fibre has long been a flexible alternative to traditional structured cabling, allowing organisations to maximise future network moves, adds and changes (MACs) while minimising disruption to their facilities.

Developed in 1982, air blown fibre ensures the appropriate fibre is installed at the right time, reducing expenditure and providing an environmentally friendly fibre solution – all while meeting stringent building codes and standards. As installers and organisations across Europe come to terms with the Construction Products Regulation (CPR), it's important to recognise none of the benefits of air blown fibre have changed.

There is broad confusion over the actual requirements of CPR when it comes to air blown fibre products. Blown fibre microducts are considered part of the cable management system within a building and are not subject to CPR requirements.

Furthermore, in the Fibreoptic Industry Association (FIA) paper titled Reaction to Fire Performance of Cabling Inside Buildings, there is clear guidance that air blown fibre microducts do not fall within the purview of the CPR and are therefore exempt. Despite this, there have been instances of manufacturers applying Euroclass ratings to their microducts, resulting in confusion amongst users.

While many cabling products fall within the scope of the CPR, there are notable exceptions.

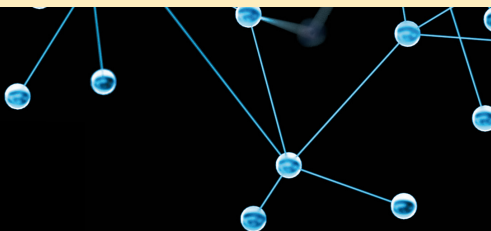
One of them relates to blown optical fibres. Optical fibres and optical fibre bundles that are installed by blowing or pulling into tubes or microducts are not subject to CPR 'if they do not have a structure to protect them against mechanical stresses and other environmental influences within the tube', according to the FIA. For this reason, blown optical fibres – in addition to

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conduit, trunking, ducting, and tray – do not fall under the scope of the CPR and cannot legally be subject to the marking, labelling, declaration of performance and designation in accordance with EN 50575. In fact, it is illegal to apply a CE designation to any product that is not subject to a harmonised standard under an EU regulation.

Despite the confusion about regulation exemptions, air blown fibre continues to have a plethora of benefits. Air blown fibre's intent has always been to easily accommodate future MACs with minimal disruption. Installing dark fibre to plan for future bandwidth demands continues to carry risk, as unterminated and untested fibres are not always fit for purpose when the time comes to use them. Air blown fibre eliminates this risk by preinstalling a microduct route and then blowing in the fibre only when required.

Air blown fibre systems are engineered

to increase flexibility, enhance longevity, and reduce costs in the long-term, all while using less material and less energy to make is a much more sustainable solution. The biggest benefit of air blown fibre remains that MACs can be achieved with little effort or disruption, creating a win for the environment and saving money for the end user.

Richard Budd

Leviton Network Solutions

Editor's comment

Although well intentioned, there has been significant confusion surrounding certain elements of the CPR – some of which continues to cause issues across the industry. Hopefully, Richard's advice clarifies the situation with regard to air blown fibre – a technology that has always had a very persuasive argument in favour of its adoption.

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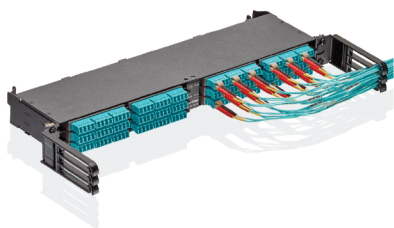
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Burden of proof

Although manufacturers increasingly use third-party product testing as a way to substantiate their claims, not all test regimes are the same. Inside_Networks has asked a panel of experts to examine whether external verification is all it appears to be or simply a way of lulling end users into a false sense of security


▶ There is no shortage of choice when it comes to products and systems for the modern network infrastructure. This, of course, is a good thing – however, it can make life difficult when making a final decision.

Third-party product testing can provide a valuable resource for determining which products are best suited to a customer's needs. These tests can often be accomplished on a much more extensive level with more products tested, more test

equipment used and more test parameters evaluated than any single customer could accomplish on their own.

To assess the situation and examine whether third-party testing can really guarantee performance and compliance to specific standards, Inside_Networks has assembled a panel of industry experts to discuss the issue.

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

An illustration of a panel discussion. A large red screen in the center displays a list of questions. To the left, three people are seated at a long orange table, each with a laptop. To the right, a woman stands holding a microphone, with a green speech bubble containing three horizontal lines. The background is a stylized cityscape with a purple sky, birds, and a hanging light fixture.

HOW IMPORTANT IS THIRD-PARTY CERTIFICATION WHEN EVALUATING A NETWORK CABLING SYSTEM AND DOES IT ALWAYS GUARANTEE INSTALLED PERFORMANCE AND COMPLIANCE TO SPECIFIC STANDARDS? DO ALL THIRD-PARTY TESTING ORGANISATIONS EMPLOY THE SAME TEST METHODOLOGIES AND WHAT QUESTIONS SHOULD MANUFACTURERS BE PREPARED TO ANSWER TO SUBSTANTIATE THEIR CLAIMS?

LEE FUNNELL

TECHNICAL SERVICES GROUP MANAGER AT SIEMON

There are now two types of third-party testing that need to be considered as part of the valuation of a newly installed system – one that is based on systems and application performance criteria and a second that relates to fire performance testing and validation in the European market.

Third-party product testing is a process that allows an independent testing manufacturer to test a cabling manufacturer's product for quality and compliance to technical standards. This is generally required by either the end user, the manufacturer of the cabling system, or both. In cabling systems, these tests may either be mandated by the wording of the installation contract or the needs of the manufacturer, should a warranty be required.

Test data should demonstrate the transmission performance compliance of the system to the technical references of the standard, based on the category or class installed. Therefore, the only way for an end user to be sure a cabling system complies with the expected performance during its entire lifecycle is via an installer's field test report, which is supported by a robust and comprehensive manufacturer warranty.

With field testing it is essential that third-party equipment is not only approved and verified by the manufacturer of the cabling systems, but also test equipment must be fully calibrated with the latest software/

firmware updates and follow the set-up procedures as prescribed by the tester manufacturer.

The second area of third-party testing and evaluation is compliance to the European

Construction Products Regulation (CPR) in terms of fire safety, release of gases and other potentially dangerous substances performance. Cable manufacturers are required to have and to make available third-party testing documentation known as a declaration of performance (DoP), as well as having relevant CE marking.

With a range of options available in terms of CPR compliance it is essential for safety and standards compliance that the

installed cable types are not only recorded in final hand over documentation but are also correct for the installed environment, as European countries have differing requirements depending on local needs and installed environments.



'THE ONLY WAY FOR AN END USER TO BE SURE A CABLING SYSTEM COMPLIES WITH THE EXPECTED PERFORMANCE DURING ITS ENTIRE LIFECYCLE IS VIA AN INSTALLER'S FIELD TEST REPORT, WHICH IS SUPPORTED BY A ROBUST AND COMPREHENSIVE MANUFACTURER WARRANTY.'

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There are strong reasons for wanting third-party verification when evaluating a cabling system. Foremost, it provides customers with proof that a product or system will meet standards requirements for performance from industry bodies such as ISO/IEC, CENELEC, IEEE and TIA.

When it comes to critical network infrastructure, that added confidence in your cabling system is paramount. The unbiased verification from a third-party lab ensures that

the manufacturer is truthful about meeting standards requirements, and shows they care about quality of their solution.

Second, some solution providers will claim that their products exceed performance standards as a way to differentiate themselves. For example, manufacturers might state that their cabling system can support wattages higher than specified in standards for power over Ethernet (PoE) or a multimode fibre system can perform at distances that go beyond limits set by the industry. Third-party testing can be used to back-up these types of performance marketing claims.

Another perk is that third-party labs will follow test methodologies that are specified in industry standards. That creates greater consistency between manufacturer testing, third-party labs and real world performance when installed correctly in the field.

Third-party performance verification should not be taken as proof of installed performance. The testing speaks to the ability of a product or system to meet the requirements of the standard but does not guarantee installed performance and compliance. The cabling environment and the skill of the installer can be significant factors in the final installed performance. For example, poor termination or placement of cables near electromagnetic interference sources can negatively affect installed

performance, so field testing is critical, regardless of third-party certification.

Reliable cabling system providers will be able to share the test reports from the third-party labs to back-up their claims. Intertek (ETL) and Underwriters Laboratories (UL) are two globally recognised names, but there are trusted regional laboratories as well. If you require a specific report and do not see it in a manufacturer's literature, you shouldn't hesitate to ask.



'POOR TERMINATION OR PLACEMENT OF CABLES NEAR ELECTROMAGNETIC INTERFERENCE SOURCES CAN NEGATIVELY AFFECT INSTALLED PERFORMANCE, SO FIELD TESTING IS CRITICAL, REGARDLESS OF THIRD-PARTY CERTIFICATION.'

CHRIS FRAZER

PRINCIPAL CONSULTANT AT LAYER ZERO SERVICES

I consider third-party certification very important. Cabling may seem, to some, like a necessary evil, however, it's an investment made by most businesses – the bigger the business the bigger the investment. Most making an investment look for some surety to protect their investment. Who wants to risk investing blindly, whether it's for personal or business reasons?

For many investments, ensuring that the product you're purchasing is approved is crucial. Approvals include things such as hallmarks and kitemarks. As a valuable investment, cabling systems should likewise be approved. Third-party testing organisations offer an opportunity to confirm that products and systems comply with the relevant standards.

Although third-party approvals can't guarantee performance, as the way that products are installed can have a massive impact on performance, at least they provide a performance foundation. Third-party approvals can give end users, installers and consultants a level of confidence beyond what a manufacturer might themselves state – a process that is rather like marking your own homework! They could even provide support in the event of a legal claim.

Not all third-party testing is the same

and therefore it's important to understand what is being claimed. Manufacturers must clearly state what testing has been

undertaken and what these tests mean, rather than simply stating that products are third-party approved. For example, sending perfect connectors and cables for third-party testing doesn't necessarily mean that they are exactly the same as those coming off the production line day after day.

Cabling has been a victim of its own success in many ways. Most expect, and get, a reliable data transmission medium, so cabling is often taken for granted. However, cabling may now need to

transmit power in addition to data, which adds another element into the mix. For something that provides an added level of confidence, at no perceptible cost, why take the risk of using products that aren't third-party tested?

Finding multiple product failures during testing of an installation can be extremely damaging to all involved, especially the installation company, which may be required to correct the faults at its own expense!

'FOR SOMETHING THAT PROVIDES AN ADDED LEVEL OF CONFIDENCE, AT NO PERCEPTIBLE COST, WHY TAKE THE RISK OF USING PRODUCTS THAT AREN'T THIRD-PARTY TESTED?'



PAUL CAVE

TECHNICAL PRE-SALES MANAGER AT EXCEL NETWORKING SOLUTIONS

We invest a great deal each year in third-party verification of our products and have done so for many years. We believe it is extremely important, however, not all independent verification is the same. Broadly speaking there are two main types – full maintenance approval and attestation of conformity.

The key difference being with the latter it is a one-off test of a product supplied to the test facility and is valid for one year. Whilst this testing has its place in establishing the initial performance of the sample batch provided, it doesn't provide any ongoing assurances.

Full maintenance approval, on the other hand, involves ongoing testing each year, along with factory audits carried out by the testing body. This includes inspections, not only of the production process, but also the quality control procedures employed to maintain standards compliance. Finally, products can be taken from the factory for the annual maintenance testing.

Third-party verification is an independent 'tick in the box' to confirm the product or set of products is standards compliant, providing peace of mind to the end user and consultant that the product will work as required during its installed life.

This benefit will become even more

important moving forward with the rapid increase in new applications utilising the infrastructure including IEEE 802.3bt (4-pair PoE), with its unique demands. Several manufacturers who have been testing their components for unmating under electrical

load of up to 2A, as part of their quality control process, are finding an increasing number of customers requesting proof that the connectivity they are investing in can support

this new level of power – thankfully third-party verification provides this independent proof.

So yes, independent verification is important and justifies the expense we go to each and every year.



'THIRD-PARTY VERIFICATION IS AN INDEPENDENT "TICK IN THE BOX" TO CONFIRM THE PRODUCT OR SET OF PRODUCTS IS STANDARDS COMPLIANT, PROVIDING PEACE OF MIND TO THE END USER AND CONSULTANT THAT THE PRODUCT WILL WORK AS REQUIRED DURING ITS INSTALLED LIFE.'

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CINDY RYBORZ

MARKETING MANAGER DATA CENTRES EMEA AT CORNING OPTICAL COMMUNICATIONS

Third-party certification is undoubtedly important. Given that the testing is based on standardised procedures, it represents an unbiased quality statement and guarantees consistent results across different test labs. This gives installers and end users peace of mind that network components will perform as expected, regardless of vendor, and work together seamlessly.

In some scenarios, however, it is more challenging to guarantee consistency when it comes to repeatability and reproducibility of test results, particularly when new regulations are first introduced.

The Construction Products Regulation (CPR), for example, was put in place in 2017 to ensure uniform classification criteria for fire performance of cables. This saw accredited test labs around Europe tasked with qualifying products from electrical and communication cabling providers to ensure circulation of safe, high quality cabling.

Stringent test procedures for all labs to follow were defined. Yet, without an industry-wide control mechanism in place to guarantee repeatability and reproducibility it could allow some variation between test labs. For example, parameters such as airflow, which didn't have distinct

requirements in the standard, were proven to have a strong impact on burn test results.

Over time these standards are refined

and consolidated, but the key point here is that while third-party certification is important, it should be supplementary to a manufacturer's own research and testing.

For Corning, like many other vendors producing and trading in the EU, we invest into internal research and development to make sure products meet the highest requirements to support safety and quality. Close collaboration with the industry and associations such as Europacable has

enabled us to increase the reliability of CPR testing and acquire extensive knowledge in the process.

It is this mixture of third-party certification and internal research and development that truly inspires confidence in performance and compliance.

'THE KEY POINT HERE IS THAT WHILE THIRD-PARTY CERTIFICATION IS IMPORTANT, IT SHOULD OF COURSE BE SUPPLEMENTARY TO A MANUFACTURER'S OWN RESEARCH AND TESTING.'



JAMES ESOM

SALES DIRECTOR AT SHANCO IT SERVICES

In my opinion third-party certification is an essential part of a purchasing strategy. Installing and terminating fully certified Category 6 or 6A cable that is then tested using a vendor's recommended cabling tester is a minimum requirement. BSI compliance standards should always be adhered to and the client given a full test report on the installation to outline its performance.

However, we regularly come across organisations that don't test and simply run the cheapest Category 5e cable for the client. Therefore, a lot of the work we do involves correcting work that has been completed to a poor standard using inferior products. An installation should be carried out by a qualified and approved installer in order to provide a manufacturer warranty that covers the work carried out.

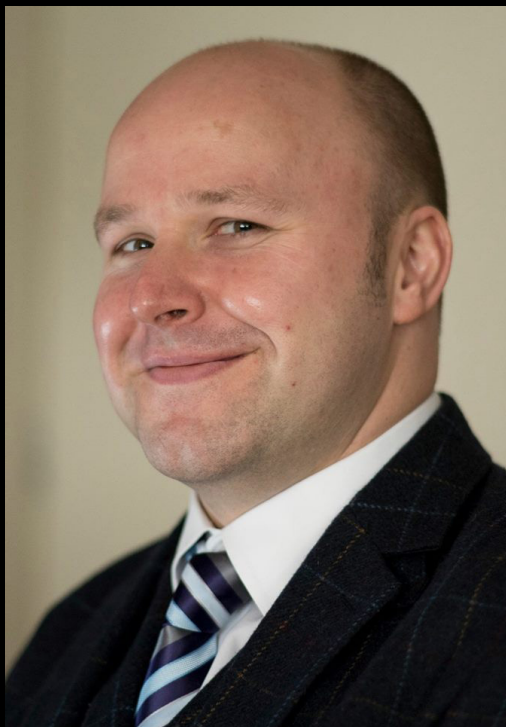
When faced with the wide range of products and systems on offer, being able to establish what justifies the vast differences in price can be difficult and not always immediately apparent. Installers need to ask if the products are designed and manufactured to meet the relevant

standards. Does the manufacturer provide independent certification to prove this and do they test at a component level as well as the channel, which can easily disguise

poorer performing components? I would advise any installer to request information on system compliance to relevant cabling standards and make sure they understand the terms of a cabling system manufacturers' warranty to ensure they are fully aware of the cover that is being provided.

Having a warranty isn't just marketing hype, it ensures that the installation is covered for any product failures for 20-25 years, which is a major selling point. Yes there is cheap cable but it is cheap

for a reason. Installers need to understand that cabling is one of the most important aspects of their businesses and getting the specification right is vital.

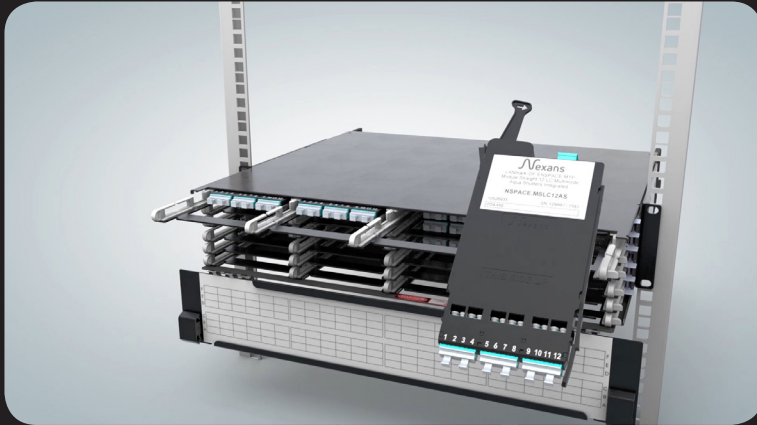


'WHEN FACED WITH THE WIDE RANGE OF PRODUCTS AND SYSTEMS ON OFFER, BEING ABLE TO ESTABLISH WHAT JUSTIFIES THE VAST DIFFERENCES IN PRICE CAN BE DIFFICULT AND NOT ALWAYS IMMEDIATELY APPARENT'

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BRINGS ENERGY TO LIFE

Let there be light

Mike Gilmore of the Fibreoptic Industry Association (FIA) offers a round-up of the latest developments in optical fibre standardisation

 The types of standards within the optical fibre domain have expanded from basic components such as fibre optic cables and connecting hardware to complex components such as amplifiers, switches, sensors and transceivers. In addition, a range of support standards for test methods and calibration of test equipment have been produced.

WORLD AT ONE

The majority of European and international standards are endorsed and published as British Standards – totalling many hundreds of separate documents. Most of these standards provide foundations upon which the industry has been built – rather than being for installers or end users – and while some standards are subject to continual revision, a large number are stable and undergo little, if any, change.

For example, singlemode optical fibre specification has been subject to gradual improvements in physical tolerances, which reflect developing production techniques. The number of different singlemode optical fibres has stabilised, with six main categories and seventeen sub-categories – with each category targeting a different market segment.

BS EN IEC 60793-2-50:2019 is now in its sixth iteration and the most obvious change has been the renaming of the optical fibre types to correspond with the ITU-T product sets. Three of the sub-categories of BS EN IEC 60793-2-50:2019 are the

building blocks of Category OS1a and OS2 cabled optical fibres used in BS EN 50173 ‘premises cabling’ standards. These have the new designations B-652.D (B.1.3, as was) together with the two ‘less bend sensitive’ B-657.A1/.A2 (B.6-a1/a2, as was) variants – all of which are now mechanically compatible with the same mode field diameter and tolerances.

MARCH OF PROGRESS

The relentless progress for higher bandwidth multimode optical fibres necessary to produce OM3, OM4 and OM5 cabled products seems to have come to a halt. BS EN IEC 60793-2-10:2019 is now in its seventh iteration and the most obvious change has been the renaming of the optical fibre types, linking them to the OM cabled products they are used to construct.

Optical fibres are normally only purchased by cable makers. The number of standards for optical fibre cables continues to increase slowly by the introduction of application specific products. New connecting hardware standards continue to be published as manufacturers produce variants of the existing technological solutions for which they want ‘licenceable’ products to service specific market segments. However, these do not tend to affect the mainstream premises cabling market.

Refer
Stan tur
Stan untu

CONNECT UP

The really important activities do not relate to a specific connector design but to connectors in general, and the most important aspect is the work to standardise the performance of the optical interface. This defines the performance requirements of mated connectors.

For singlemode the work was completed in 2006 with the publication of BS EN IEC 61755-2-1 (non-angled) and BS EN IEC 61755-2-2 (angled). This was augmented in 2015 with BS EN IEC 61755-2-4 (non-angled reference connections) and BS EN IEC 61755-2-2 (angled reference connections). The requirements of these standards provide 'grades' of insertion and return loss for 'normal' and 'reference' products. However, we still await the work on the multimode solutions – a future IEC 61755-2-3 – for which many drafts have been prepared but not progressed to

publication.

As useful as these standards are, or will be, for the procurement of connector components, premises cabling – BS EN 50173 and BS EN ISO/IEC 11801 standards – requires a maximum specified performance in 100 per cent of cases. To support this objective, the international standards committee dealing with connecting hardware has advised the values shown in the table below.

MAKING THE GRADE

For singlemode we have three types of connector interface (reference grade and standard grade – tuned and untuned) and for multimode we have reference grade and standard grade. It is recognised that very few tuned singlemode connections are used in premise cabling installations but they are included for completeness. This is a major advance because it now allows the

Singlemode				Multimode		
	Reference	Standard tuned	Standard untuned		Reference	Standard
Reference	≤0.1 dB	≤0.6 dB	≤ 0.4 dB ^a	Reference	≤0.1 dB	≤0.45 dB
Standard tuned	≤0.6 dB	≤0.75 dB	≤0.75 dB	Standard	≤0.45 dB	≤0.75 dB
Standard untuned	≤0.4 dB ^a	≤0.75 dB	≤0.75 dB			
a ≤0.6 dB for APC connectors						

‘A future amendment of BS EN 50174-1 will provide the necessary advice and guidance on which test methods to apply in specific circumstances but that will be developed in tandem with the revision of ISO/IEC 14763-3.’

correct definition of test limits within the various test methods standards that are so frequently flouted during installations and can cause substantial contractual problems.

This is therefore a good time to introduce the main topic of interest to installers and end users alike – test methods. We have entered a particularly critical period for the testing of installed fibre optic cabling because we have three international standards – all of which have failings.

TESTING TIMES

The most comprehensive are BS EN IEC 61280-4-1:2019 (for multimode) and BS EN 61280-4-2:2006 (for singlemode). These contain test methods for every possible configuration of installed cabling but are considered too complex for the average installer to interpret – particular the multimode version.

The other document is BS ISO/IEC 14763-3, which specifies methods for the testing of links and channels in accordance with ISO/IEC 11801 standards. The current 2014 version has been amended in 2018 but has been found to contain many discrepancies and potential errors, and is considered by the FIA to be unusable without the provision of additional information. This has been accepted by the committee responsible for its development and they plan a much more ‘installer friendly’ version.

It has been decided that a future amendment of BS EN 50174-1 will provide the necessary advice and guidance on which test methods to apply in specific circumstances but will be developed in tandem with the revision of ISO/IEC 14763-3, so is some time off.

SUPPORT STRUCTURE

In the interim, the FIA has updated its technical support document TSD200-4-2-1 to provide the necessary additional information. In fact, all the current FIA technical support documents, white papers and shortform guidance documents covering everything from the Construction Products Regulation to cleaning of optical end faces will have been updated by the end of Q1 2020. ■

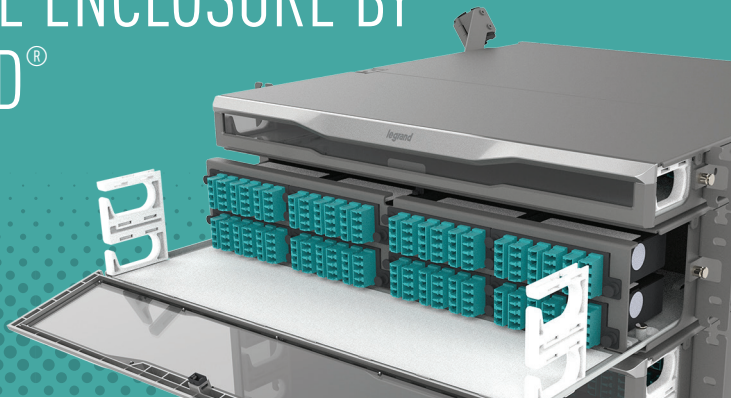




MIKE GILMORE

Mike Gilmore is managing director of e-Ready Building and is closely involved in standardisation of the design, implementation and operation of telecommunications facilities and infrastructures across the world – an activity which draws together LAN/ WAN developments, cabling design and installation practice together with EMC and energy management issues. Gilmore has also played an instrumental role in the FIA – he currently holds a voluntary role, representing it within the standards development community and, in addition, chairs its audit and arbitration committees.

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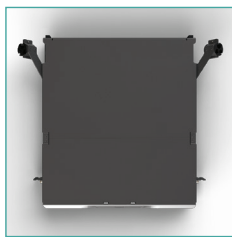
The Infinium[™] HD Enclosure is an ideal solution for fibre networks in data centres and building networks. The high-density footprint accommodates up to 96 fibres in 1U of rack space and is available in 1U, 2U and 4U sizes, as well as accommodating Base-12 and Base-8 applications in the same enclosure.

This enclosure has many innovative features designed with the installer, contractor, and network professional in mind—providing a simplified process when installing or working within the enclosure.

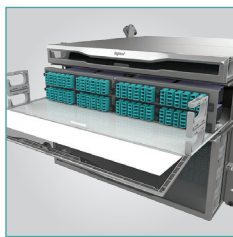
These key features are exclusive to the Infinium[™] HD Fibre Enclosure:



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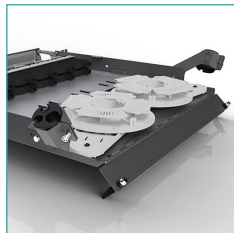
Increased Visibility



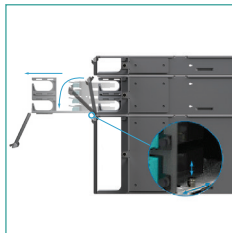
Easier Labelling



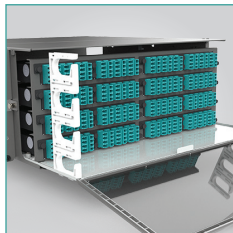
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Better Accessibility



Greater Scalability



Sustainable Packaging



E: ortronics@legrand.co.uk | W: legrand.us/Infinium-HD

Nexans

Nexans' ENSPACE optical fibre system now offers a choice of densities to meet the needs of different applications. Bandwidth demand continues to grow, which leads to a vast increase in the number of connections.

For data centre operators, one of today's main challenges is to significantly increase the number of connections without using more space for rack units and cabling. Higher density racks and patch panels make it possible to add way more connections in the same space. However, simply introducing the highest possible density throughout the data centre isn't the answer – partly for cost reasons but also from an access management point

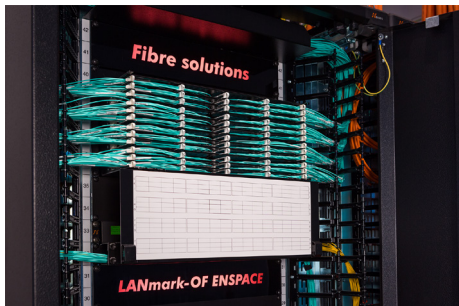
of view.

In central patching zones, where hundreds of connections come together and rack space is at a premium, it is

definitely worth introducing ultra-high density patch panels. In server racks, however, fewer connections are required, and high density doesn't really bring any significant benefits. There's usually just one

single panel at the top of the rack. Here, standard solutions offer more than enough connection capacity.

For more on smart choices using Nexans ENSPACE [CLICK HERE.](http://www.nexans.co.uk/LANsystems)
www.nexans.co.uk/LANsystems



Excel Networking Solutions

Excel Networking Solutions has significantly enhanced its optical fibre offering to

embrace the latest developments in technology.

In the UK, to achieve 'standards compliance' you should specify compliance with BS 6701:2016+A1:2017,

which states that 'installation cables which are subject to the Construction Products Regulation (CPR) shall as a minimum meet the requirements of Euroclass Cca, s1b, d2, a2'.

Since 2017, Excel has expanded its fibre offering to include a range of compliant

grades of fibre cable with a reaction to fire Euroclass of Cca or higher. All compliant

Excel products are accompanied with a declaration of performance (DoP) certificate, a label on the outer box and Euroclass printing on the cable's sheath.

Excel has produced

a [series of webinars](#) designed to further explain various topics relating to the CPR. To view the full range of [Excel Fibre products](#) or for more information about CPR and complying with the standards, [CLICK HERE.](#)

www.excel-networking.com



Draka/Prysmian

Prysmian Group has dramatically revised the design of its Draka E-Series fibre cable solution, which is part of the Draka UC Connect cabling system. The central tube of up to 24-fibre family of cables now comes with a 20 per cent reduction in outer diameters, making it the smallest cable available in its class.

The Draka E-Series suite of cables are also the only non-metallic cables with gel-filled tubes that carry Cca and B2ca CPR ratings. Having gel-filled tubes provides true internal and external water-blocking with increased robustness and immunity to mechanical and environmental effects.

During installation, the pulling process of optical cables can increase fibre strain, leading to more stress on fibres and

ultimately reducing their operational lifetime. Prysmian has doubled the tensile strength of all the E-Series variants. The metallic armoured design has increased from 1,000N to 3,000N and the gel filled non-metallic armoured from 1,500N to 3,000N.

The Draka E-Series portfolio includes internal and external and both non-metallic and metallic armoured central tube cables. All cables meet the requirements of ISO 118011, EN 50173-1:2002, IEC 60794-1, TIA GR20, ICEA 640 and ICEA 696.

Draka UC Connect products are available through Comms Centre, Comtec, Dunasfern and Precision Cables. For more information [CLICK HERE. uk.prysmiangroup.com](https://www.prysmiangroup.com)



Ideal Networks

It's time to change the way you certify fibre optic cable.

Ideal Networks' LanTEK IV with FiberTEK IV is a future proof Tier-1 optical cable certifier that brings a new standard to the industry, saving time and improving profitability.

The new user interface guides you through the task of setting up fibre test standards and configuring the certifier correctly. In under 10 seconds FiberTEK

IV measures the optical loss at two wavelengths and the length of the cabling under test. Full integration with Ideal AnyWARE Cloud streamlines certification with pre-configured jobs and easy transfer of completed tests using Wi-Fi or mobile hotspots.

An integrated red laser visual fault locator on each module with a dedicated activation button speeds up troubleshooting and eliminates the need to carry a separate VFL. The high-power laser is equally capable for use on multimode and singlemode cabling and features steady and flashing modes.

[CLICK HERE](https://www.idealnetworks.net) to find out more.
www.idealnetworks.net



Leviton



The most common cause of optical fibre system failure is contamination. One particle of debris interfering with the fibre core of a connection can cause increased insertion loss, back reflection, and even damage the connector or high cost equipment. That's why Leviton offers internal shutters on its LC fibre cassettes and adaptors.

Not only do these IP5x-rated solutions help prevent contamination from dust,

they reduce waste and speed deployment by eliminating the need for dust plugs and ensure safer installation by protecting from laser light.

The US made shuttered adaptors use high-quality zirconia ceramic sleeves and have been tested to ensure a secure ferrule mating when connected up to 1,000 times.

[CLICK HERE](#) to learn more.
www.levitonemea.com

EDP Europe

EDP Europe stocks and distributes the latest high capacity fibre optic management system from Huber+Suhner – IANOS.

IANOS is a class leading and future proofed fibre optic management system that facilitates Base-2, 8, 12 and 24 pre-terminated cable systems for best in class density, speed of installation, handling and scalability – all major factors in future proofing cabling infrastructure.

IANOS is designed to accommodate a quick, simple and inevitable upgrade path from 10 Gigabit Ethernet serial to 40 and 100 Gigabit Ethernet parallel optics.

IANOS offers individual modules that

easily slide out reducing cord disruption and easing access, with each 1U chassis providing a maximum of 144 LC

connections. Single or twin modules help improve flexibility, with twin modules offering improved routing space and splice handling.



IANOS chassis are available in 1U or 4U rackmounts.

IANOS is available from stock at EDP Europe.

For more information call 01376 510337,
[CLICK HERE](#) to send an email or to visit the website [CLICK HERE](http://www.edpeurope.com).
www.edpeurope.com

HellermannTyton

HellermannTyton offers an extensive optical fibre connectivity range, suitable for any application including data centres, commercial installs and the 'user end' of FTTX networks.

As well as a wide range of pre-terminated RapidNet fibre solutions, HellermannTyton supplies a full end to end solution including fibre patch panels, fibre patch leads, fibre connectors and adaptors, along with a range of multimode and singlemode cables.

The pre-terminated RapidNet fibre system is available as standard in singlemode and multimode formats. The RapidNet fibre cassettes offer a choice in

connectivity options including LC, SC and MTP in cassette to cassette, cassette to fan out, or cassette with MTP connectors on the rear.



With fibre solutions available in both singlemode and multimode, including the new Hyperscale 8-Fibre solution, and a full range of connection options including LC, SC and

high density MTP, the fibre range from HellermannTyton caters for any project of any size.

To find out more [CLICK HERE](http://www.htdata.co.uk).
www.htdata.co.uk

Draka/Prysmian

Prysmian Group's Draka UC Connect's warranty has been extended to cover the company's SiroccoXS blown fibre solutions.

SiroccoXS is now offered as part of the Draka UC Connect family of products for the first time. The SiroccoXS blown fibre system uses

compressed air to blow optical fibre into pre-installed tubes. It enables on-demand deployment of optical fibres from one internal or external network point to another, allowing for rapid upgrades to the latest

fibre technologies. Existing tube routes can also be easily interrupted at any location, so re-routing to new users can be achieved as and when required.

SiroccoXS substantially lowers network

build costs, and provides more flexible design and better damage recovery performance than conventional systems, avoiding high initial capital expenditure or extensive network planning.



The 25 Years Application Assurance Warranty, of which Sirocco is now included, covers Draka UC Connect connectivity products and cable which ensures performance of the permanent link and channel performance in accordance with ANSI/TIA/EIA-568-C

and ISO/IEC 11801. The warranty is only available through Draka UC Connect Installation Partners.

To find out more [CLICK HERE](http://uk.prysmiangroup.com).
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The rise of passive optical LAN

 PON is an umbrella industry term for fibre-based access networking architecture that is designed for both residential environments (FTTx) and enterprise environments (POL). POL delivers all the values of a traditional ethernet network, simply transmitted in a different way.

Excel offers a comprehensive selection of PON Solutions, delivering fibre to a range of environments across FTTx and POL network infrastructure systems. Regardless of the size of the building, the Excel range of PON products offers numerous options in fibre connectivity and distribution.

In our **latest video**, you can see how different products from the Excel PON Solution can work together to deliver fibre to the home and distribute internet services to various IP devices around a single-dwelling unit.

TAKE A CLOSER LOOK AT THE PRODUCTS:



Enbeam FTTH Outlet

The Enbeam FTTH Outlet has been designed for applications such as Fibre to the Home or Fibre to the Desk. This outlet is

also compatible with a DIN rail mounting plate.

View more product details in the **Excel PON Solution Catalogue**.



Enbeam Fibre Dome Enclosure

The Enbeam Dome Enclosure can be installed without any specialist tools and with an

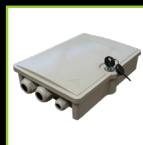
IP68 rating, it can be mounted externally whilst retaining its performance capabilities.



Enbeam Open-Ended PLC Splitter

The Enbeam PLC Splitter is compact in size and highly reliable with wide operating

wavelength and good channel-to-channel uniformity.



Enbeam Lockable Splice Enclosure

The Enbeam Lockable IP54 Splice Enclosure can be used to terminate fibre to the

internal patching field, offering space to house a PLC splitter suitable for most indoor and outdoor applications.



Environ Residential Consolidation Enclosure

The Environ Residential Consolidation Enclosure allows equipment to be

mounted on to multifunctional back plates in various configurations.



[Read the PON Product Guide online](#)



[Read the PON Brochure online](#)

WHY CHOOSE THE EXCEL PON FTTP SOLUTION?



Space and cost savings

Fewer switches, smaller enclosures and less real-estate footprint requirement allows for a more cost effective

use of space, helping to create considerable capital expenditure savings in the upfront spend of network deployments. The nature of a POL solution is passive, meaning the costs associated with power and cooling systems is taken out of the equation, leading to increased operational expenditure based savings and increased return on investment.



Energy efficient

A typical POL solution has a reduced cooling requirement and a lower power consumption rate than a traditional LAN

network, as there is no power requirement in the mid-span.



Superior performance and scalability

The passive optical splitters provide higher efficiency by allowing each fibre optic core to

be split into 32 signals, which could ultimately lead to 768 end user ports (32 by 24 port ONTs).



Easier network management

With fewer components to create a complete end-to-end solution, the whole network is easier to manage. All management of the ONTs is delivered at the level of the OLTs. This centralised positioning and management in a PON network creates a simpler solution.



Increased security

The use of fibre optic cabling in a PON solution ensures the utmost security for data transmission, in comparison to a traditional LAN network.

Read more about the benefits in the **Excel PON Solution Brochure.**

These key benefits indicate why the use of singlemode fibre and PON is on the rise. Increasing demand in the market for high-speed, high data rate applications at an affordable cost to be installed into ever-smaller spaces has allowed fibre optics to grow and be developed – enter PON. Now making its way into the enterprise sector as well as residential means there are more opportunities for customers to deploy new infrastructures. For further details about Excel's PON Solution **CLICK HERE.**

excel-networking.com/pon-solution

excel
without compromise.

Sudlows announces new office in Mumbai

Sudlows has opened a new office in Mumbai. This is the second international office to open for Sudlows under the leadership of John Rippingale, following the successful launch of its Dubai office five years ago. Sudlows has been working with key clients across India for the last two years, supported by its United Arab Emirates (UAE) office.

The new Mumbai office will provide the rapidly expanding Indian data centre market with Sudlows' full suite of professional services, across the whole data centre lifecycle – from design through to testing and commissioning. The team in Mumbai will be adding value and benefit to organisations to transform and upgrade

their critical data centre facilities across India. A new dedicated website has also been launched to provide additional

support and information to customers in India.

John Rippingale, director at Sudlows India, said, 'The Indian market has huge demand from global and regional hyperscalers, which drives a

competitive edge, increased efficiencies and faster facility handover times from data centre providers. This new office represents the strategic and rapid expansion of the Sudlows brand and services across the region and ensures we can support our local clients directly.'



Schneider Electric promotes Pankaj Sharma to executive vice president of its Secure Power Division

Schneider Electric has promoted Pankaj Sharma to succeed Dave Johnson as executive vice president of its Secure Power Division. Sharma has held leadership roles in the company including commercial, strategy, marketing, mergers and acquisitions, and line of business.

'Pankaj is well prepared to take this challenge as he has been working successfully in the secure power business for the last 19 years, living in various parts of the world,' said Philippe Delorme, executive vice president, energy management at



Schneider Electric. 'I congratulate him, and I thank Dave Johnson for his outstanding legacy. For 27 years, Dave has been dedicated to the success of APC initially then Schneider Electric in the secure power space. A pillar in our company, Dave has pushed a customer first approach and a

dare to disrupt attitude to keep reinventing a business that has gone through many transformations.'

CNet Training expands with two new team members

CNet Training has appointed two new members of staff. Andrew Reeves joins the company as an instructor and Andy Brisbane has taken up a role as market researcher.

Reeves has 15 years' experience in the IT services industry including project management for a variety of large installations such as the London 2012 Olympics, BBC, Walt Disney, Westgate Oxford and Bloomberg. In his new role as part of CNet Training's technical team he will deliver high-quality network infrastructure education programs from The Global Digital Infrastructure Education Framework. This will involve assessing learners and marking assignments in

support of the BTEC qualifications quality process.

As market researcher Andy Brisbane will work alongside CNet Training's sales and marketing teams to provide insight and support the company in identifying growth opportunities. He joins the team from an analytical background and has experience in working to develop critical leads and processes and research management.

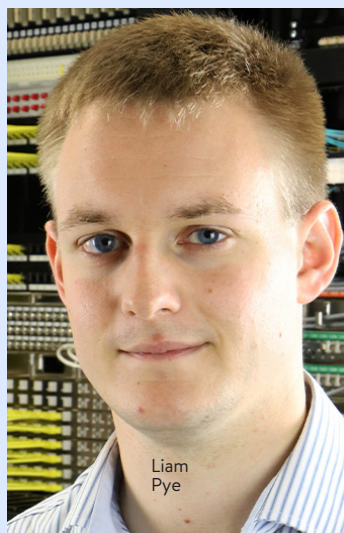
Andrew Stevens, president and CEO at CNet Training, said, 'We are focused on growth throughout the digital infrastructure industry and this expansion comes at an exciting and busy time for the business. The new team members are a fantastic addition to the team – they will work alongside the existing strong team of individuals employed by CNet Training across the world to help strengthen and further grow the global brand identity and reputation.'



Excel appoints new internal international sales manager

Excel Networking Solutions has appointed Liam Pye as new internal international sales manager.

Nadeen Tisi, Excel's international sales director, said, 'I am delighted to provide Liam with this opportunity. He has been with the business for seven years and has a good, solid understanding of the international side of our business, especially from territory management through



to project and pipeline ownership. His experience will help us to develop both efficiencies and processes within the team in order to make them become more proactive and profitable in the coming years.'

Speaking of the role, Pye commented, 'I am excited to take up this responsibility and I'm confident that my experience with Excel's international team over the last seven years will provide the right foundations for me to head up the internal team.'

Mayflex names new interim head of security

Mayflex has appointed Tom Filce as interim head of security. Filce has worked for Mayflex in a variety of sales related roles since 2000 and has an excellent understanding of the security, infrastructure and networking marketplace. He has previously led the security strategic accounts team and has worked closely with the larger Mayflex security customers, providing a bespoke account management service for each of them.

Ross McLetchie, sales director at Mayflex, commented, 'Many



Tom
Filce

congratulations to Tom on his successful application for this role. He demonstrates excellent business acumen daily, looking after our strategic accounts, is a well-respected member of the business and is extremely popular amongst his colleagues in the security sales team. The role

will be interim for six months and upon a successful completion, the position will become permanent from the 1st June 2020.'

R&M appoints new general manager in China

R&M has appointed a new general manager for China. Daniel Zhang will succeed Sam Ho, who successfully directed the R&M business in the Chinese market over the last 11 years.

Zhang has been active in the Chinese data centre industry for over 20 years with specific expertise in the power, cooling, enclosures and cabling



Daniel
Zhang

markets. He held different positions over the years such as product manager, operations director, country manager and business development manager.

Zhang commented, 'It's an honour and a great opportunity to develop and strengthen R&M's position in China. I have always seen R&M as a company with high-quality products and solutions. I'm looking forward to exciting our customers with R&M's solutions for data centres but also other connectivity applications.'

CHANNEL UPDATE IN BRIEF

Mobotix has been awarded Secure by Default certification in the UK.

A special presentation has been made to Jabra in recognition of becoming the largest vendor at Nimans in 2019.

Veeam Software has appointed Danny Allan as chief technology officer (CTO) and senior vice president (SVP) of product strategy.

Jim Schaper, Ivanti's current chairman of the board and 30 plus year veteran of the software industry, has been appointed the company's chief executive officer.

Neeco Global ICT Services has signed an agreement with Versa Networks to become its global technology partner in the market for software defined wide area network (SD-WAN) services. Neeco will provide replacement services for Versa Networks' best-in-class SD-WAN hardware.

Smartsheet has opened a new Sydney office to better serve customers and partners across the Asia Pacific region and build on its growing global market presence. This is the company's third international location with offices in London and Edinburgh.

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Inside Networks

2020 CHARITY GOLF DAY 20th MAY

An opportunity to compete and entertain clients and colleagues at the superb Marriott Hanbury Manor Hotel & Country Club.

www.marriottgolf.co.uk/club/hanbury-manor

Indoor Simulator Competition

The cost of a 4-ball team will be £595 (+VAT).

There will also be discounted accommodation at Hanbury Manor Hotel & Country Club, which will include breakfast and use of the extensive leisure facilities. Price to be confirmed.

As in previous years – teams will be asked to provide a raffle/auction prize on the day in support of the charity.

Organised by:

Promoted & Supported by:



Playing the Hanbury Manor PGA Championship Course:

This prestigious golf course was the first to be designed by Jack Nicklaus II and still incorporates features from an earlier 9-hole course designed by the great Harry Vardon. The course is now widely recognised as one of the best in England.

The event will ask for 4-ball teams to compete in a 'best 2 from 4' full handicap Stableford competition over 18 holes (with a 2-tee start from 10:30am).

Live Scoring sponsorship is available.

Golf will be preceded by tea, coffee and bacon rolls at registration and will be followed by a 3-course private dinner and prize giving with charity raffle.

There will also be opportunities for sponsorship of all aspects of the day – all raising money for Macmillan Cancer Support – since 2005 this industry event has raised over £78,500 through our charity golf events!

Supporting:

**WE ARE
MACMILLAN.
CANCER SUPPORT**

Quickclicks

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

Power over Ethernet – Fixed Network Foundation Layer for 21st Century Smart Buildings is a white paper from **Panduit** that illustrates how power over Ethernet will streamline processes and improve building performance, while creating fully connected and environmentally sustainable working environments. To download a copy [CLICK HERE](#).

Preparing for Wi-Fi 6 is a white paper from **Siemon**. [CLICK HERE](#) to download a copy.



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Future Proofing Networks With FTTO is a blog from Wolfgang Beier of **Nexans**. [CLICK HERE](#) to read it.

Liquid Cooling Technologies for Data Centers and Edge Applications is a blog from **Schneider Electric**. [CLICK HERE](#) to read it.

Millennials and Careers in Data Centers is a podcast by Carrie Goetz of **StratagiTcom**, who interviews Bill Kleyman from Switch and Kacey Armstrong of Vertiv on the next generation of talent and inclusion. [CLICK HERE](#) to hear it and access other podcasts from Goetz.

Axis Communications has published its latest whitepaper – Cybersecurity: The Biggest Threat to Retail. To download a copy [CLICK HERE](#).

Answers to Your Top Fibre Questions is a new digital handbook from **Fluke Networks**. [CLICK HERE](#) to obtain a copy.



Time to get serious

▶ Is 2020 the year we are going to stop cutting corners and start taking professional development seriously? The focus for professional development and education going forward needs to be on an overall corporate long-term strategy and not just one department doing the basics in order to tick human resources boxes and to get individuals working on-site.

BENEFIT CHECK

Many so-called training organisations use their marketing materials to make bold statements, claiming that they can cheaply and quickly train/certify teams, and get workers the cards required to work on-site, without going through a rigorous training program or quality check. The digital infrastructure industry should really be looking to change this and look at how organisations, and their clients, can really benefit from professional training and certification.

The network cable infrastructure sector is the fourth utility and needs to be treated in the same light as gas, electrical and water. Would you want someone coming to do work in your home or organisation if they weren't adequately trained or certified? The answer is more than likely no, and yet we continue to allow people in the network cable infrastructure sector to work without the correct certifications and quality checks. The system itself is flawed. Organisations shouldn't always go for the cheapest route – they are often looking

for a full development package but don't want to pay for it, as they are enticed by organisations who shouldn't be allowed to claim they offer certain services in the first place.

If network cable infrastructure is not installed correctly and it goes wrong it is hugely costly and inconvenient. You only need to read the press about the impact of cancelled flights, accessibility to online apps, lockouts on government systems – the list goes on. This is without considering any legal or reputational implications that could occur, increasing costs even more and absorbing valuable time.

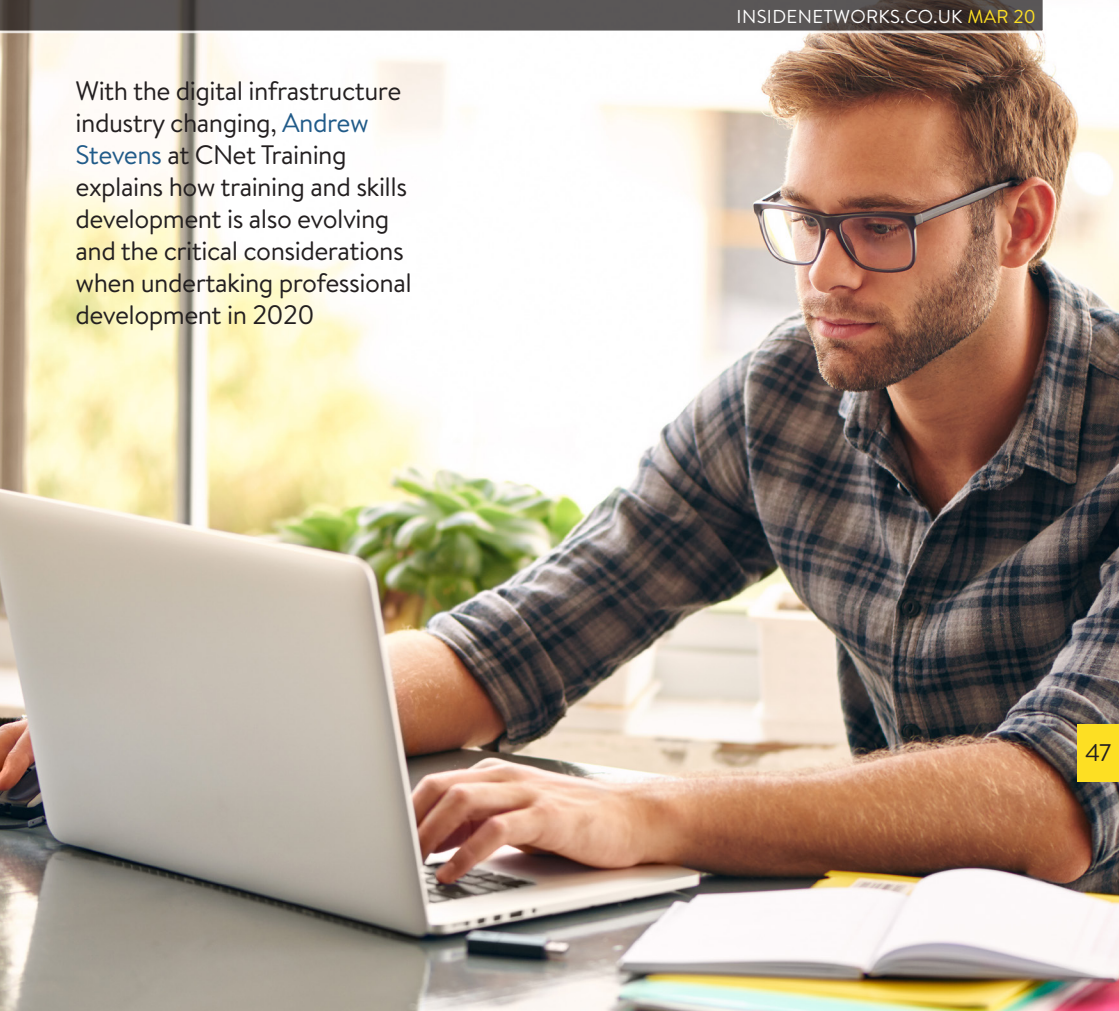
PLAN OF ACTION

This is 2020 – we are currently experiencing the fourth industrial revolution, and we need to be sure that we have the right people and structure in place to be able to keep up with the increasing demand and changes the digital infrastructure industry faces. Organisations now have the option to take a much more targeted approach to pinpoint precisely where and, more specifically, what professional development and education is required for their individuals and teams.

There are two key parts to professional development and education. Initially, the



With the digital infrastructure industry changing, [Andrew Stevens](#) at CNet Training explains how training and skills development is also evolving and the critical considerations when undertaking professional development in 2020



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focus for the organisation needs to be on the core capability of their teams. In the first instance, individuals need to be benchmarked to ensure that everyone is up to the same/certain level. Once this is in place, organisations can then put a long-term professional development plan in place. The critical thing to remember is that this process isn't something you can do overnight or in a month. It's an ongoing long-term process to continuously develop and upskill individuals throughout their career within an organisation.

When an organisation like CBRE Data Centre Solutions announces plans to

certify 100 per cent of its workforce globally, it sends a strong message to the rest of the data centre sector. My message is, don't be the individual or the organisation that is left behind – start taking professional development seriously. CBRE is taking a robust approach by putting a professional development schedule and plan in place to continuously ensure its teams are up-to-date with the latest trends and company processes.

EASY DOES IT

New and innovative ways of learning are opening up and it's never been easier for

‘My message is, don’t be the individual or the organisation that is left behind – start taking professional development seriously.’



organisations to develop their teams. This is giving organisations more options and providing solutions for individuals who can’t travel or spend long periods out of their work environment.

Individuals can consider their workload, patterns of work and assess which program would be best suited to them, depending on their preferred learning style. Those who get distracted at home and prefer collaborative working with other people could benefit from learning in a place based classroom environment. On the other hand, if a learner is unable to travel for a full week to a classroom based environment, or is unable to stay away due to restricted travel and accommodation budgets, then there are remote attendance learning options, where the

learner can work from a location that best suits them but join the classroom remotely.

Learners who are constantly travelling or in mission critical roles, where they cannot commit to a specific date to attend a classroom or remote attendance program, distance learning options allow them to dip into the learning resources on any day and

time zone that best suits them. This allows them to thoroughly plan their own study schedule and learn at their own pace. Others may prefer the collaborative and networking team based learning that comes from on-site learning where an instructor

teaches on-site at an organisation with a class specifically created for that one organisation.

NO EXCUSES

No-one has an excuse not to have an apprentice as part of their team. With the recent launch of the Network Cable Installer (NCI) Apprenticeship, there is such an excellent opportunity for every network cable infrastructure organisation to have an apprentice as part of their team and long-term plan. It’s such a fantastic way to develop and grow much needed new skills and talent into the sector.

With the NCI Apprenticeship all the planning has been completed in readiness for both employers and employees to follow. It alleviates the need for the

employer to dedicate valuable time and effort in this essential planning stage and allows the apprentice to commence straight away. It costs the organisations very little to take an apprentice on, and the overall set-up is minimal. Apprenticeships are a vital tool for organisations to plan ahead, grow their teams and ensure consistency of up-to-date skills across the workforce.

RULES AND REGULATION

Many deem regulation as being a time-consuming paper exercise. However, it is needed. You wouldn't dream of being an electrician without having the right certifications and it should be the same for those working within network cabling, considering the importance of the task being carried out. Everyone talks about the quality of installation, but how do we know the installers have adopted the current standards and codes of practice during the install? How many actually have a genuine copy of the relevant and up-to-date installation standards?

There is a need for a trusted trade association that could take this on too – to put the processes in place and manage it for everyone, effectively becoming the central watchdog for all. Government regulation may occur in the future if the industry doesn't address this issue. As public awareness focuses more on connectivity, the penny will drop soon within government, and the industry would be in a far stronger position if there were an effective self-regulation plan already in place.

OPPORTUNITY KNOCKS

2020 is an opportunity for the industry to make some big changes – it's now over to you. ■



ANDREW STEVENS

Andrew Stevens is president and CEO at CNet Training. He joined CNet Training in 1997 as sales director and has been CEO since 2004. Stevens has been an active member of numerous industry trade bodies and has also been awarded a number of industry accolades for his work including the legacy associated with working with the Olympic Delivery Authority Employment & Skills Team for the 2012 Olympic Delivery Authority. Here he worked on educating unemployed individuals with the Certified Network Cable Installer (CNCI) certification, which is now been adopted by the industry as the standard certification for network cable installers.

Mayflex

The Mayflex Academy provides customers with access to certified vendor training courses in a professional training environment. Each course is delivered by our own training managers, who are fully qualified after undertaking rigorous vendor training courses, which have been completed to each of their desired high standards.



Many of these courses are free of charge and offer customers an opportunity to broaden their knowledge levels

and potential customer bases. Vendor courses currently delivered include Excel infrastructure solutions and Avigilon

security solutions. The Mayflex Academy equips customers with the knowledge and skills necessary to successfully specify and install the products available from the extensive Mayflex product portfolio.

Courses are held at our offices in Birmingham and London, and are usually

delivered to a maximum of 10 delegates.

To review course availability and to reserve a place [CLICK HERE](#) or to send an email [CLICK HERE](#).
www.mayflex.com

CNet Training

CNet Training now offers a unique remote attendance capability, delivered using collaboration enabled facilities within specially designed smart rooms.

Remote attendees benefit from the same instructor-led classroom environment in real time, with the same levels of interaction, collaboration and instructor contact as those who are physically present in the room. Remote attendees effectively sit in the same classroom alongside all the other learners and can, therefore, see, hear and enjoy the same learning experience.

The CNet Training smart rooms are fitted with the latest high-definition, bi-directional audiovisual communication and collaboration tools that effectively transports the remote attendees into the classroom alongside all other learners. The

instructor, and all the learners, can see and interact with each other in the usual way. The technology also allows remote attendees to participate in one-to-one or group activities and conversations via live virtual breakout rooms.

This new way of learning has many benefits for both the learner and employer. Remote attendance programs remove the need for travel and accommodation and the additional costs associated with this. The programs are available in time zones across the world, allowing learners to choose to take part in the program from wherever suits them the best – this may be at home, a meeting room or facility in their current workplace.

To find out more [CLICK HERE](#).
www.cnet-training.com

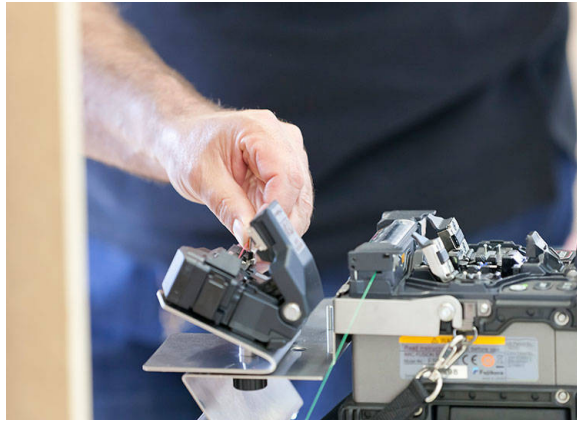
R&M

Knowledge sharing is one of R&M's core values and is put into practice in several ways. The [R&M Academy](#) offers comprehensive programs for R&M partners, associates and customers,

providing professional support for pre- and post-sales activities, as well as installation, testing and maintenance.

A [Qualified Partner Program](#) for installers, planners and R&Mfreenet users helps boost partners' expertise and project quality. R&M also offers one of the most complete structured cabling [warranty programs](#), based on EN 50173, ISO/IEC 11801 and ANSI TIA 568.

Knowledge sharing with internal and external stakeholders is also supported



by regular workshops, webinars and publications such as the [Data Center Handbook](#), which offers insights into data centre infrastructure planning and the latest networking

technologies.

Furthermore, R&M places great importance on developing talent amongst employees and executives, with training across a wide range of topics including management, sales, negotiation, marketing, intercultural communications, methodology, project management, product knowledge and languages.

[CLICK HERE](#) to find out more or to send an email [CLICK HERE](#).
www.rdm.com

Fast Lane

Fast Lane is committed to delivering the highest quality training on the hottest technologies. Our courses offer a personal approach to learning with vendor certified instructors and the latest equipment available in the classroom. We pride ourselves on delivering a unique training experience that goes above and beyond the standard course materials.

Fast Lane has a number of industry leading experts that are always on hand to help you design, implement and troubleshoot the very latest data centre technologies. Working closely with our specialists we can specifically tailor the

training to suit your requirements, which can be either delivered on-site at your location or at one of our state-of-the-art training facilities.

Fast Lane also provides a whole range of authorised cloud, virtualisation and data centre courses. Enhance your skills and abilities to design, install, and support a data centre networking solution. Data centre certifications can enhance your technical skills, confidence and the value you bring to your IT department.

To find out more [CLICK HERE](#).
www.flane.co.uk

Investors in people

Mike Doolan of CBRE Data Centre Solutions (DCS) offers a service provider's view of data centre training

▶ Training is fundamental to any service provider and for our business our people are what differentiates us from our competition. In our pursuit to be an employer of choice and a leading data centre facility management firm, CBRE DCS needs to attract, continually train and retain the industry's top professionals. We value our people and believe that developing our talent is vital, which is why our staff receive double the training compared to the industry standard.

MAXIMUM UPTIME

The data centre is an environment with no room for error. Human error is simply not acceptable when we are operational custodians of our customer's assets. A data centre's reputation and success relies upon successful service delivery with no unplanned downtime. In this chain of dependency, leadership and motivation of all team members are key to success.

There is a direct relationship between investment in people and exceptional service. We have developed an industry leading suite of training and development courses which help to improve the day-to-day operational capabilities of the site team and provide them with additional skills and experience to further their careers. Our recently developed Converged Model for the data centre lifecycle further cements this commitment, as we ensure our people understand all functions carried out within

a data centre, not just isolated elements. As a result our people are better prepared through a comprehensive understanding of data centre plant and technology services.

SELECTION PROCEDURE

DCS Select is our leading global assessment tool to support the recruitment of data centre professionals, whether from critical facilities or technology disciplines. DCS Select identifies ideal behavioural traits and abilities to succeed in the role, producing a report, which rates candidates based on core competencies including understanding customer needs, communication, competence to deliver, health and safety, environmental, deciding and initiating action, integrity and resilience.

By selecting the competencies that are most important for the role and probing those areas for evidence of how the individual has demonstrated effectiveness, we are more likely to recruit the best person for the job.

The benefits of using the assessment tool as part of the recruitment process is to ensure we get it right first time. This helps to reduce the cost per hire and attrition, standardises global recruitment processes and improves the candidate experience.



TRAIN TO GAIN

Research demonstrates that no matter how resilient an engineering infrastructure appears, nearly 80 per cent of preventable failures relate to human error or process failure. Usually associated with high reliability organisations (HROs) and the airline, nuclear and petrochemical industries, human factors training is designed to identify, analyse and improve specific human behaviours, which impact on the successful delivery of engineering related services within a critical environment. It examines the effects of human attitudes and behaviour

and how these impact human and team performance.

CBRE has invested a significant amount of time and resources to combat human factor related errors by engaging renowned psychologist, Tim Marsh, to further develop the CBRE DCS Human Factors Training program. Marsh is considered a world authority figure on behavioural safety, safety leadership, and organisational culture. The resulting program covers wellbeing and other factors that can affect a technician's ability to perform well and act in stressful situations. This is achieved through

‘Research demonstrates that no matter how resilient and engineering infrastructure appears, nearly 80 per cent of preventable failures relate to human error or process failure.’

classroom training, facilitation, group discussions and practical exercises, and aims to increase safety, quality and efficiency in critical maintenance operations by reducing human error and its impact on maintenance activities.

SERVICE PROVIDER

We also provide in-house technology training courses conducted by qualified vendor subject matter experts. Third party industry standard training courses are also provided and include:

• A+ TRAINING

A+ is a general technology engineer hardware training course enabling operatives to gain an understanding of the internal hardware workings of general network devices.

• CCENT

Cisco Certified Entry Networking Technician (ICND 1)

• CCNA

Cisco Certified Networking Associate (ICND 2)

• INTERCONNECTING CISCO NETWORK DEVICES (ICND)

These training courses are Cisco specific qualifications for engineers and cover the general networking principles for

Cisco network devices from a first line perspective.

• ITIL FOUNDATION TRAINING

This ensures that data centre technicians understand the basic service management disciplines used by technology teams and can effectively follow and participate in technology incident, problem and change management activities.

COMPETENCE AND CONFIDENCE

CBRE utilises the CNet Training Competency and Confidence Assessment Modelling (CCAM) tool to establish and assess the baseline knowledge for each of our data centre technicians. It provides real-time analysis of both competence and confidence for individuals and teams, and exposes root causes of employee behaviour – positive and negative – in data centre facilities.

It's complex software, which is supported by a team of psychologists and works through various criteria to identify people risk. It maps out an individual's skill sets, knowledge base, and ability gaps. The results of each assessment allow the right course of development action to be planned and taken to address weaknesses. It can also be used as a valuable pre-employment tool, allowing managers to understand the development investment required for potential new staff. The output from the assessment shows an individual's understanding of a subject compared to their confidence in the responses they provided. The assessment concludes that a low knowledge based with a high-level confidence, or a high knowledge base with a low level of confidence are not desirable results.

To further support technical areas of

expertise CBRE also adopts site-specific scenario training exercises. Scenario training exercises are completed annually and ensure processes and training is maintained to the highest standards. It also ensures site teams consistently understand criticality, operation, engineering procedures and guidelines set by our clients and their core business.

BETTER BY DEGREES

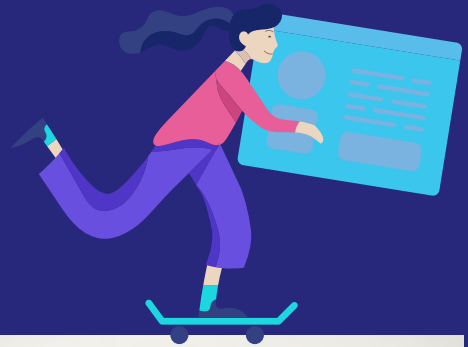
At CBRE we offer a master's degree in Data Centre Leadership and Management for senior members of the organisation. The aim of this degree is to unite the existing knowledge and skills of data centre professionals with essential new learning centred around leadership and management within a data centre environment.

This programme has been designed for people in leadership and management positions within data centre facilities and is a highly valued qualification within the industry. By offering this to our top talent we raise the bar on knowledge and expertise within the business.

MULTI-SKILLED WORKFORCE

We use training to ensure that we offer unmatched expertise via a single, elite team of real estate, facility and technology experts, unlocking maximum efficiencies and cost savings while reducing risk. All technicians within this model are trained in the provision of technology services. We're recruiting and training the next generation of data centre technicians capable of understanding and operating the entire facility and its payload. This multi-disciplinary skill set enables technicians to make better operational decisions focused on the service outcome. It drives employee engagement, improves talent

retention, enhances career progression and improves customer satisfaction and uptime through a skilled workforce. ■



MIKE DOOLAN

Mike Doolan is chief reliability officer at CBRE DCS and is responsible for driving best practices in operations, maintenance and reliability across the business to ensure high availability and to reduce operational risk. Doolan is responsible for maintaining client uptime through consistent and proven security, operational, technology, safety, training, and quality standards.

Our Lady of Mercy primary welcomes Wi-Fi to support interactive classrooms

Our Lady of Mercy Catholic Primary School in Sligo, Ireland, opened in 1993 with the amalgamation of three schools and now caters for 500 pupils.

For the school to evolve and cater for innovative technology, it needed Wi-Fi in each of its 18 classrooms, covering communal areas and the gymnasium. With more devices requiring access to the network, the school's existing network infrastructure, which consisted of a single



network point in each room connected to a laptop, couldn't keep up.

The school underwent a network upgrade with the aid of Compupac IT and its Wi-Fi network has now been rebuilt

from the ground up with Zyxel's centralised cloud based Nebula network solution that manages 80 devices including laptops, interactive screens, iPads and teachers' laptops.

Prysmian Group awarded \$38m contract by Mexican government's Company Comisión Federal de Electricidad

Prysmian Group has been awarded a new contract worth about \$38m by the Mexican government's Comisión Federal de Electricidad (CFE) for the project Proyecto de Conectividad Fibra Óptica Red Eléctrica Inteligente REI.

This is the largest project ever launched by the government in Mexico in terms of cable supply, and it will connect remote regions in the country with high-speed broadband. It includes the design, supply and installation of OPGW and ADSS cables. OPGW cables will be produced in the Prysmian's plant

in Vilanova i la Geltrú, Spain, while ADSS cables will be produced in the plant located in Durango, Mexico.



For this project, Prysmian took part in an international tender, involving several

local and overseas producers. The contract is a significant milestone for Prysmian in Mexico and it offers considerable scope for development in all telecom sectors in the near future, with broadband internet subscribers constantly growing.

CommScope delivers enhanced connectivity for Auto Leebmann

Auto Leebmann is based in Passau, Germany, and manufactures BMWs, Minis and four different makes of motorbike at four different locations. Each site is connected via VPN and the large reinforced concrete buildings and steel beams interfere with the Wi-Fi capabilities, which are key to the customer experience and success of the dealership.

Together with CommScope, Ruckus Beamflex technology was able to handle the site conditions and deliver high performance Wi-Fi

connectivity by providing an increased range, which reduced the number of access points by 28 per cent compared to other providers.



The final IT solution has 120 access points, which are installed indoor and outdoors, boosting the speed of warehouse processes, while allowing vehicles to be assessed directly in the check-in area via a handheld tablet. The central multi-site Ruckus solution has

also reduced IT support tickets, keeping customer waiting times to a minimum.

PROJECTS & CONTRACTS IN BRIEF

60 homes in the rural Monmouthshire village of Llanddewi Rhydderch will soon be able to benefit from ultrafast broadband thanks to the deployment of a gigabit-capable fibre network, courtesy of Broadway Partners.

The National Football League's Tennessee Titans have upgraded to Extreme Network's Wi-Fi 6 solutions, which will provide tens of thousands of fans with faster speeds and higher-performance connectivity on game day.

Telent and Merseyside Fire & Rescue Authority (MRFA) are marking a milestone moment this year as their collaborative partnership enters its 19th year, with the contract now secured until 2024.

G-Core Labs has launched the new point of presence of its global network infrastructure in Mumbai.

IX Reach has partnered with NewTelco to allow NewTelco's customers to take advantage of IX Reach's full portfolio of solutions, including its connectivity to 240+ locations globally. The location provides hosting services based on dedicated or virtual servers and also complements the global architecture of the company's content delivery network, with one of the best response rates of 30ms within the local market.

Things can only

Nick Sacke of Comms365 makes the case for an enterprise internet of things (IoT) model

▶ As the IoT market steadily matures from the early adopter proof of concept to full-scale rollouts, increasing numbers of connected devices are coming online around the world – IDC forecasts that there will be 41.6 billion connected devices by 2025.

FACE UP

It has become apparent that companies looking to deploy production networks at scale will face challenges that may compromise overall benefits if not addressed.

For those organisations that are considering trialling their IoT use cases first on public ‘innovation’ networks – due to the ultralow cost – there are a number of vital elements missing in such services, which are standard practice in an enterprise grade production network design. These elements are fundamental to a future proof, secure and reliable IoT deployment that can stand up to technical and commercial scrutiny.

Companies can overcome these challenges by moving away from, or stopping using public networks in the first place. Rather, they should start an IoT project in a private, enterprise grade network design, where there is already an advanced set of software features, techniques and seasoned providers ready to deliver a successful IoT trial and production rollout.



ACCEPT NO LESS

The backbone of an enterprise IoT solution is connectivity from device to application. Controlling radio mechanisms, authenticity and authentication is a critical

get better



requirement of an enterprise network server. Providing a clear network overview, comprehensive meta-data, gateway insights and management alerting for problems ensures a network design that

can be operated and managed at scale.

By contrast, public IoT networks have been designed to encourage innovation for the individual user and have been very successful in sparking a training ground community of hobbyists, academics and interested parties that can connect and test their IoT devices and use cases. But whilst you can connect an IoT device and pass data, there are limits on further functionality – there is no decoding of data, no management of the gateway, no quality of service on message delivery, or service level agreements.

FORWARD THINKING

In a LoRaWAN network, the protocol used between gateway and server is User Datagram Protocol (UDP). Known as a packet forwarder, it simply takes a message and passes it on. But UDP, which is still common in many IoT gateways today, has difficulties with authentication and the ability to recover from losses on the network. There is a prolific use of these legacy protocols and techniques on public networks, which provides no method to guarantee delivery of information.

A successful IoT implementation relies on guaranteed delivery of information from the gateways to the network server. But with legacy protocols used on public networks often being a cause of missing data points, this is a frequent cause of failed proof of concepts (PoC), casting a shadow of doubt over the reliability of the end to end solution.

In an IoT model fit for the enterprise, it's imperative to use software on the gateway, which guarantees the reliable transfer of the data, and confirms it. A private network design, combined with software that confirms data delivery to

‘While public IoT networks have proven successful in encouraging innovation in IoT, when it comes to rolling out an enterprise grade production network, an ultra-secure model is required that also has essential elements that can demonstrate reliability, security and scalability.’

unforeseen problems when a solution is ready to scale. Enterprise IoT network server components are built with implemented security features at every layer and encourage the use of secure software and integrations. This means it does not

the application layer – and can handle retransmission of the data if required – means that the quality of service (QoS) can be significantly improved.

If, under all conditions, there is high availability as well as guaranteed secure and reliable data delivery, a PoC will be much safer and more secure. Even in PoC stage, you still need to be able to demonstrate reliability, constant connection, failover and back-up of connection, and with an enterprise model built on a single cloud private infrastructure, that can easily be achieved.

SECURITY MEASURES

With an enterprise IoT model, there is a set of security techniques and standards that simplifies compliance audits and requires little or no effort in terms of changing corporate firewalls and proxies – it has all the necessary security elements baked in from the start.

The first consideration for any deployment from the moment the first sensor and gateway are connected should be security. However, in practice it is often only taken into consideration when deployments start to scale or move into production. Building on an insecure platform might not be an immediate concern, but it typically ends with

compromise on security by using basic insecure software, which is a common scenario with public innovation networks.

LATEST UPDATE

Building an IoT network at scale requires powerful operational and management tools, and complete overview of the network, users and resources, ensuring you maintain full control. As a deployment scales, debugging, user management and valuable administrative tools are essential. For example, in an IoT production deployment, there could be hundreds of gateways deployed. So how do you ensure the gateways have the latest security patches and software updates?

In an enterprise IoT model, lifecycle management is highly automated. Along with the security and authentication, updates can be securely retrieved, self-updating and, due to this, a new version of software can be remotely installed/run without any human intervention. The same cannot be said for a public network – any updates or security patches would have to be retrieved and installed manually – which, for a large scale IoT rollout would be a significant challenge, potentially leaving the entire deployment vulnerable to attack and lengthy downtime.



CONCLUSION

While public IoT networks have proven successful in encouraging innovation in IoT, when it comes to rolling out an enterprise grade production network, an ultra-secure model is required that also has essential elements that can demonstrate reliability, security and scalability. It's not enough just to connect to a public network and show data flowing – businesses must pay close attention to these crucial elements, or else the deployment may never move out of PoC, potentially putting business revenues and return on investment at stake if the network is being relied upon to deliver key operational data and insights for action. With an enterprise model that has security and reliability baked in from the start, organisations can be assured that their private network is secure, reliable and can stand up to scrutiny, even in an era of increased regulatory requirements. ■



NICK SACKE

Nick Sacke is head of products and IoT at Comms365 and has over 30 years of telecommunications experience, ranging from sales to director roles. He holds product and commercial development responsibilities for a set of innovative, market leading mobile data, bonding, fixed line communications and IoT service solutions for Comms365.

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Modern climate control systems support uptime but to understand why, you first need to consider the impact of poor climate control in order to decide which equipment to employ. IT manufacturers are increasing performance capabilities with each new generation of technology, while also reducing footprint. This leads to the heatload within racks rising. If this is left unchecked, notably after an upgrade, it risks causing significant harm to your IT systems.



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right down to rack level. The EkkoSensor includes a local display of key values along with configurable temperature alert thresholds.

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Doing things differently

Today's distributed enterprises need adaptive, high performance wide area networks (WANs) that are inherently secure and easy to manage. Hubert da Costa of Cybera explores how organisations can transform their network architecture to compete successfully in the fast evolving digital economy

▶ No longer a buzzword, digital transformation is changing the rules of engagement as big data, mobility, the internet of things (IoT), analytics and artificial intelligence (AI) impact every industry sector's value chains. Today's organisations are leveraging cloud resident solutions to boost productivity, reduce operational costs and enable disruptive new business models. But getting transformation ready depends on having modern core platforms in place

that enable a company-wide agile operating model. For highly distributed companies, that means undertaking a fundamental rethink of the network itself.

RETHINKING THE NETWORK

According to IDC, 'the WAN needs to be reinvented'. That's especially true for distributed enterprises that are battling the limitations of current WAN architectures to provide connectivity to corporate data centres and the cloud for their remote sites.

Indeed, the increasing pervasiveness of software as a service (SaaS) applications, mobile computing and IoT deployments means increased network flexibility and security is a must have. To eliminate performance issues and maintain productivity, today's networks need to be dynamic enough to cope with rapidly increasing volumes of traffic, data and workflows between users, data centres and the cloud. They also need to be capable of



supporting the growing number of devices connected to the WAN.

Global connectivity is key to enabling digital transformation. But when networking costs for distributed enterprise sites such as restaurants and retail stores can exceed 60 per cent of overall IT spending, it's little wonder that organisations are evaluating the benefits of the software defined WAN (SD-WAN) to cost effectively address their rapidly growing bandwidth demands.

TIME TO WAVE GOODBYE

Multi-protocol label switching (MPLS) technologies have been the foundation of traditional WANs for many years. Offering a private network architecture that keeps corporate traffic distinctly separate from the public internet, MPLS makes it possible to integrate multiple traffic types on to a single physical network. However, when rolling out digital transformation programmes the challenges of building WAN networks around MPLS are significant.

MPLS requires expensive routers to facilitate and administer the network, which means the cost of each new site deployment requires a significant investment in equipment and associated support contracts and software licenses. Furthermore, MPLS introduces considerable complexity into the network structure – IT staff have to maintain

explicit configurations within every router and as the network scales, this point to point network topology becomes ever more convoluted.

For businesses that need reliable and secure connectivity at the edge, or are adding significant numbers of new devices, these issues are economically incompatible with the business priorities of today.

TAKING ADVANTAGE

Organisations looking to deploy digital transformation programmes and eliminate

‘Organisations looking to deploy digital transformation programmes and eliminate cost and complexity from their networks are taking advantage of SD network technologies to seamlessly interconnect remote sites, add bandwidth, and simplify the management of their evolving WAN environments.’

cost and complexity from their networks are taking advantage of SD network technologies to seamlessly interconnect remote sites, add bandwidth, and simplify the management of their evolving WAN environments.

Operating as a network overlay,

SD-WAN uses software and a centralised control function to intelligently steer and direct traffic across the WAN and reduce IT costs. Eliminating the need to backhaul all traffic from remote sites, it utilises multi-path intelligence to dynamically assure the most efficient route for business critical traffic.

As user needs change, the SD-WAN can be remotely customised and reconfigured, which in turn eliminates the time and resources needed to tackle network issues or bring remote sites online. Offering zero

touch provisioning, configurations and policies can be programmed once and pushed to all branch locations – ensuring more consistent policies across the enterprise.

With SD-WAN, remote locations can be defined simultaneously and kept fully in sync using a centralised cloud based policy administration that's inherent in SD-WAN connectivity models. By giving IT teams complete visibility of a single integrated system, management and monitoring of the entire network can be centrally orchestrated with minimal effort.

SECURITY STRATEGY

Alongside performance and cost advantages, security is a further top concern for distributed enterprises that need to protect their digital network investments.

Establishing a consistent security strategy that can dynamically span and adapt to the demands of digital transformation is no easy task, but SD-WAN provides better visibility into network traffic so that potential threats can be identified, isolated and addressed before they impact the entire network. They also provide built-in security features that can be integrated with other software appliances, enabling administrators to build up and configure multiple layers of security that are appropriate to every use case.

For example, implementing a secure SD-WAN solution greatly simplifies the enterprise network and allows mission critical applications to coexist with public applications, such as Wi-Fi, on a single network. This enables the implementation of application-specific security – applications are segmented into their own dedicated logical networks, which prevents them meeting other application traffic on the same network.



BEST OF BOTH WORLDS

Embarking on a WAN transformation project doesn't necessarily mean abandoning traditional technologies like MPLS. Today's intelligent SD-WAN platforms can combine any transport service – MPLS, T1 fibre or wireless networks like 4G and 5G – into a single logical high-bandwidth link, automatically routing and rerouting traffic to maintain compliance with quality of service and security policies.

Enabling enterprises to do more for less, network administrators are free to

choose the most appropriate technology and transport based on the budget available for the network as part of the digital transformation roadmap. That's especially relevant for industries such as retail and banking, where branches with varied transport options can be centrally configured and brought up and down quickly.

In practical terms, organisations planning to build a connectivity strategy based around SD-WAN often begin with piloting installations to demonstrate the practical benefits of the technology. Pursuing a branch by branch rollout avoids disrupting existing architectures and minimises risk, while ensuring that key stakeholders remain fully engaged with the benefits.

LOOKING TO THE FUTURE

According to IDC, the next networking evolution to impact the distributed enterprise is the deployment of virtualised network functions (VNFs) in branch office locations. These software based versions of network applications eliminate the need for purpose built hardware devices such as routers.

VNFs are set to increase network scalability and agility while enabling the better use of networking resources. In other words, making it easy to rapidly initiate new services and address changing user demands. And, since VNFs replace physical hardware, they will also result in reduced operational and capital expenditure.

BREAKING DOWN BARRIERS

While legacy network complexity, security and operational challenges have put barriers in the way of effective WAN deployments that can keep up

with rapid innovation and change, approaches like SD-WAN make it easy for distributed enterprises to move forward with their digital transformation plans. Offering enhanced network flexibility, performance, functionality and services – which includes creating reliable connections to and from the cloud – SD-WAN is proving the ideal solution for helping organisations achieve their digital transformation objectives. So much so that, according to IDC, by 2023 enterprises expect to be spending \$5.25bn on SD-WAN solutions. ■



HUBERT DA COSTA

Hubert da Costa is senior vice president and general manager EMEA and APAC at Cybera. He joined the company in 2018 and has been tasked with expanding this cloud-based network and application services organisation internationally.

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