



# The heart of the network

The growing demands that organisations are placing on their Data Centres means that organisations are having to increase the amount of power and bandwidth that they provide to the heart of their network infrastructure. This presents Nexans and its partners with some very exciting opportunities.

It is impossible to understate the importance of the Data Centre to enterprise customers today, says Harry Forbes, Chief Technical Officer at Nexans Intelligent Enterprise Solutions (IES). “The Data Centre is basically a warehouse for all your electronic data and if you are a large financial organisation, for example, every transaction is going to be recorded on that resource.”

## DIFFICULT CHALLENGES

Companies face a number of difficult challenges in managing the expansion of the Data Centre. As well as being the heart of the entire data network and the repository for all business-critical information, it is the focal point of new applications and systems deployment.

A number of issues are placing additional and significant pressure on the Data Centre. The mounting volume electronic data is putting pressure on storage space, compliancy issues are driving the need to retain more information, and convergence is increasing the volume of traffic that the network has to support. For many organisations, there is also a requirement to be operational 24-hours a day – a function of increasing globalisation and the growing importance of e-commerce.

Storage requirements alone are doubling every year and rather than simply throw more capacity at this problem, companies have been deploying virtualisation technologies. This however, means that more fabric switches need to be used to ensure that there are sufficient

paths for data transmission between the different storage resources.

## PRE-TERMINATED CABLING

To meet this need, Nexans IES has developed a range of high density fibre-optic panels that will support up to 96 fibre ports (48 fibre pairs) in a single 1u panel. They have been very well received, says Forbes. “Customers have been crying out for this kind of solution as it enables them to deploy multiple panels within a rack and support many more fibre ports than they could before.”

But while convenient, this solution presents a challenge to installers. It can take five minutes or more to fusion-splice a fibre connector and

## DID YOU KNOW?

- Nexans has introduced space saving high-density copper and fibre panels.
- Pre-terminated fibre assemblies enable very fast network deployment and improved performance at the same time. Nexans guarantees as much as 13 connections within a 100-meter 10Gbase-SR Ethernet link.
- Nexans is the first to provide an unconditional warranty for 10 Gigabit Ethernet (10Gbase-T) over copper cabling.

that means that a single panel can take as much as eight hours to complete. Few customers will accept this much downtime and installers often face tight deadlines. To solve this problem, Nexans has developed a method of pre-terminated cabling so that a high quality connection can be made prior to installation (see also page 14).

## THE VERY HIGHEST STANDARDS

This has the added, and vitally important, benefit of ensuring that all connections meet the very highest standards. Increasingly, the fibre connections that are being implemented to support increased virtualisation are linking the data network to the storage area network (SAN) and storage devices are usually a significant physical distance from the communications room. Increasingly bandwidth loads of up to 10 gigabits are being placed on these connections and they need to be polished to the highest of quality standards to ensure minimal losses and robust performance.

The pre-terminated OM3 fibre-optic cables, prepared under carefully controlled factory conditions to stringently-enforced quality controls, ensure that the system will support 10 gigabit Ethernet applications over distances up to 600 metres.

# Making a move with complete confidence

C&C Technology Consulting

**When you are up against tight deadlines and need to give your customer flexibility as well, Nexans has the ideal solutions for Data Centre applications.**

C&C Technology Consulting is a UK-based consulting services and solutions company that advises its client on IT solutions and how they can maximise their investments. It has expertise in designing and delivering application provisioning, virtualisation and access infrastructure services and solutions using a range of leading-edge and innovative technologies.

The company has worked with Nexans Cabling Solutions for around six years and it has been a good experience, says Managing Director of the company, Ralph Colombo. "We are independent consultants and we use Nexans quite a lot. We have always found their products to be good quality and reliable and they perform in accordance with the industry standards. They are also very responsive in terms of their supply and support."

When C&C was asked to perform a Data Centre re-location for an important customer, it found good use for some of Nexans latest offerings. The client in question was a very important one for C&C – a

leading legal firm with a global presence, which wanted to relocate its Data Centre from London, to a more secure site in Birmingham.

A lot of rack-mounted and other equipment that could not be located in racks needed to be installed in the new Data Centre and this presented C&C with several challenges. "The sheer space that the cabling requires and fitting all the connections into the space available and giving the customer the flexibility to perform moves, additions and changes was a real challenge," says Ralph Colombo.

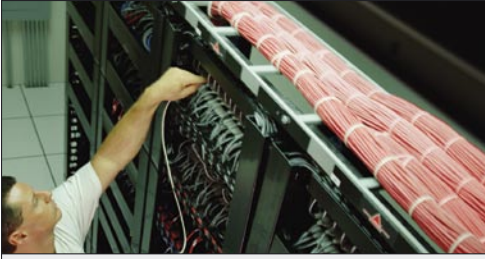
In addition, the re-location needed to be carried out during a single weekend so time was critical. By using Nexans pre-terminated cabling solutions, C&C was able to map out consolidation points in the network design which meant that, when it came to installing cables, the engineers simply had to plug in the right connections. The re-location was a complete success and thanks in no small part to the cost-effective and high quality solution that was provided from Nexans.

## DEMAND FOR PROCESSING CAPABILITY

Another challenge in the Data Centre is the increasing demand for processing capability. Blade servers are being used to cram more power into smaller physical spaces and this raises two issues – how to deal with the increased bandwidth, and how to deal with the heat that the processors will generate.

Deploying fibre here would inflate cost too much and until now, most network designers have cascaded gigabit copper switches to overcome this problem. However, the recent development of an IEEE 802.3an standard for running 10 gigabit Ethernet over twisted-pair copper promises to provide a more cost-effective and practical solution. Nevertheless, when using copper cable for such high data rates the effects of alien cross-talk need to be overcome, and Nexans has

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## Quality you can depend upon



If you want to make sure that the Data Centre is resilient and future-proofed, there are no better solutions than Nexans.

Based in Münster, central Germany, GGRZ specialises in T systems and infrastructure and was asked to provide systems for the new premises of Asset Managers Westfälisch-Lippische Vermögensverwaltungsgesellschaft (WLV). They worked with specialist partner, Netsystem, to deliver the cabinets, patch fields and cabling needed for the server rooms and infrastructure.

Having outgrown its previous location, WLV wanted to implement the very best and most modern solution for its Data Centre – one that would support its needs for many years into the future. As the requirements for the cabling infrastructure were very high, both fibre and Cat-7 have been implemented into the network, and Nexans high-density panels used,

to provide long-term investment protection to the customer.

**“The quality of data cables, plugs, and connectors is very high. Nexans products are very well thought-out and made.”**

ROGER SCHWENTKER,  
CHIEF TECHNOLOGY OFFICER, GGRZ

This structure, says Roger Schwentker, Chief Technology Officer (CTO) at GGRZ, ensures that the network delivers excellent availability and has built-in redundancy, so the company is well-protected against

down-time. This helps to protect the company’s investment and plan for the future as well.

The Nexans solution has the key criteria for quality standards and physical characteristics and has been able to deliver exactly what was required. “The quality of data cables, plugs, and connectors is very high. Nexans products are very well thought-out and made.”

GGRZ and Netsystem are currently undertaking the final stages of equipping the Data Centre and are able to do so with complete confidence in the cabling and patch panel infrastructure that is supported by Nexans solutions. As well as meeting current requirements in the new building, they will support future needs as well.

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developed and introduced a range of shielded systems that will meet the most demanding needs for 10G support, ensuring data integrity and a high Quality of Service (QoS).

As this shielded cable is smaller than UTP cables built to meet the same standards there is an immediate benefit in space saving. The introduction of water cooled cabinets with a cooling capacity up to 25KW means more blade servers are being deployed in a single cabinet which in turn is creating congestion problems beneath the floor where extra cabling needs to run.

Nexans have also taken into account the need to support PoE (Power over Ethernet) as more IP devices such as VoIP phones, IP security cameras and wireless access points put an increasing

### NEXANS INTELLIGENT ENTERPRISE SOLUTIONS IN THE DATA CENTRE

#### Challenges

- Mounting pressure on storage capacity
- Compliancy driving need to retain information
- Convergence increasing traffic loads
- Need to put more power into a smaller space

#### Solutions

- High-density fibre-optic panels
- Pre-terminated cabling solutions
- High quality shielded copper solutions
- LANSense Intelligent Infrastructure Management

#### Benefits

- Greater scalability in the Data Centre
- Faster deployment of high-quality connections
- Improved flexibility
- Better management and control
- Reduced cost

strain on power loading requirements. As the demand for more power increases, elevations in cable temperature are a possibility. The combination of conductor and shield design ensures voice traffic integrity is not affected by increases in temperature or unwanted noise.

#### INTELLIGENT INFRASTRUCTURE MANAGEMENT

“With increasing port density, the growth in bandwidth and traffic, the need to manage resources and ensure that the entire system is

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**“It’s more important than ever now to ensure that your core capability on the data switches and cabling infrastructure is properly managed.”**

HARRY FORBES, CHIEF TECHNICAL OFFICER,  
NEXANS INTELLIGENT ENTERPRISE SOLUTIONS (IES)

performing efficiently is growing so demand for intelligent infrastructure management is on the increase,” says Forbes. “It’s very important that your port capacity on the data switches and cabling infrastructure is properly managed. You need to know which ports are allocated

so that you can make maximum use of the resources that are available and be able to rectify faults quickly.”

LANsense can provide a complete map of port usage, so that instead of simply installing more switches when more capacity is needed, what is there already can be used to its full capabilities. When a disconnect occurs, technicians can immediately identify and rectify where this has happened.

The Data Centre is going through a paradigm shift in technology, applications, deployment, environment, and its management. Both customers and suppliers alike are faced with greater challenges to overcome as many of these issues are beginning to overlap. New standards

are being created to enable consistency and compatibility as we move forward; however, they do not provide the answers to all the questions.

“Nexans therefore, have endeavoured to stay ahead of these issues whilst working closely with customers to ensure the right solutions are available and the customer can make a much more informed decision,” says Forbes. ■

**OTHER COMPANIES THAT HAVE CALLED UPON NEXANS FOR THEIR DATA CENTRES INCLUDE**

- Bouygues Telecom – Paris – France
- Pilkington AG – Gelsenkirchen – Germany
- Belgacom – Brussels – Belgium

