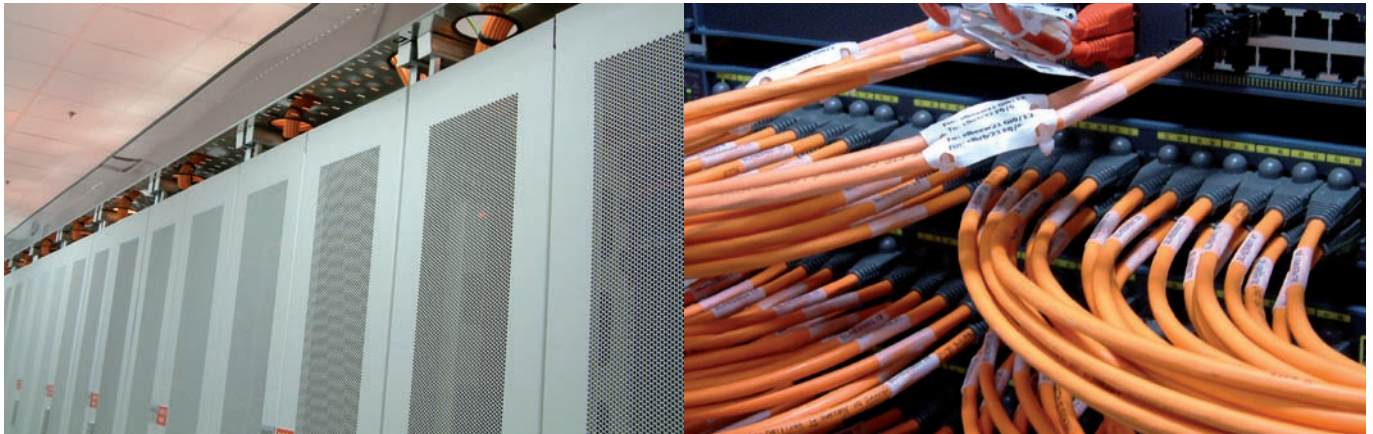


## Environmental monitoring system provides dependable solution for remote-located enterprise data centre



Environmental monitoring and access control (EMAC) and Nexans LANmark copper and fibre solutions have been deployed with LANsense Intelligent Infrastructure Management to provide totally reliable application support and remote management

When a major enterprise organisation committed to the design and planning of a remote data centre to support its critical systems, only the very best solutions were good enough. Nexans Cabling Solutions and its partner, Integrated Networked Solutions, had all the answers.

It is common practice now for large enterprise organisations to locate their data centre well away from their main place of business. Systems and networks are so vital to the efficient running of the business, that 100 percent availability must be assured.

The systems and the entire supporting infrastructure must also be totally reliable and deliver consistently high performance to users. Without these assurances, any large organisation is highly vulnerable as the loss of access to systems – even for only a few minutes – can have very serious consequences.

This was certainly the case for one large commercial organisation that decided to rely on Nexans Cabling Solutions to meet its needs in a new remotely-located 'lights out' data centre. Due to the sensitive nature of

its business, the organisation cannot be identified in this success story.

### **No compromises**

In this case, the customer was not prepared to make any technical compromises whatsoever whilst staying within a defined budget. Its business depends entirely on the availability of its systems so only the very best would do. Having reliable and flexible cabling solutions to link all the servers and networking infrastructure together was absolutely essential.

A number of reputable organisations were invited to tender for the work. One of them was Nexans' partner, Integrated Networked Solutions (INS), which had already completed a number of projects for the customer through consultants KDDI.

## Executive Summary

**Customer** • Major Financial corporation

**Location** • Remote data centre

**Requirement** • Complete and 100 percent reliable cabling solution with intelligent remote management

**Equipment** • EMAC, LANmark-6 10G screened cabling, LANmark-OF3 fibre-optic cabling, LANsense remote management



From the outset, INS understood that this particular installation would present a number of unique challenges, says the INS Project Manager responsible for the installation. Even so, INS was confident it could meet the stringent criteria set out for the implementation of network cabling and containment solutions as well as the provision of the extensive array of network cabinets and patching that would be required to meet the specifications.

The remote data centre was to be run 'dark' or 'lights out' – in other words, without the need for any on-site staff to be located there. This meant that there had to be an absolute guarantee that all equipment located in cabinets, patches and fixed cables would function perfectly at all times. It also meant that there was a definitive requirement of the organisation to have precise remote control over every aspect of the infrastructure down to the level of turning on or off an individual socket in a rack mounted power distribution unit.

### A trusted supplier

INS was chosen to provide the cabling and installation services. This was due to the strong track record it already had with the company and the excellent proposal it put forward for the installation. It had recommended the use of Nexans Cabling Solutions throughout.

"We have demonstrated our capability to handle large projects and deliver a more personal level of service than you might expect from some larger organisations. We have always installed Nexans cabling for this particular customer and the resulting installation has always been excellent", says INS' Project Manager.

Nexans' was also very helpful in supporting and advising INS in putting the proposal together, the Project Manager notes. "With some manufacturers you can get the solutions but you can't always get the support. Nexans provides all the elements you need, the pre-sales and on-site support, so you can't go wrong."

Another impressive aspect of the INS proposal was the inclusion of LANsense as the intelligent infrastructure management tool that together with EMAC would give the customer complete control of the data centre from their remote location. This would exclude the need of having technicians residing on-site.

### Major challenge

While the requirements were very specific and uncompromising, INS had no major difficulties in meeting them with Nexans' solutions. The greatest challenge came from the stipulation that in this facility, cabling could not be run either under the floors or be suspended from the ceiling. INS had to innovate and design a special containment system to run along the top of the cabinets and have it custom-built.

This has more than exceeded expectations and worked perfectly in practice having been constructed to allow room for more cables to be added later permitting future expansion of the data centre into pre-installed rows of cabinets. "It sounds complicated but it is one of the simplest systems you will see and it works perfectly", INS concludes.

Whilst on site with INS and customer engineers, Nexans specialist Glynn Phillips was able to ask about how the system had worked in practice. Feedback from customer engineers carrying out equipment installation and configuration was that the centre design overall and access to containment was the best they had experienced to date, wanting to see this as the gold standard for the future.

### Built to perform

The data centre has four rows of 14 cabinets – three rows for servers, storage and switches, and another to allow for expansion. These rows are inter-connected to a row of 12 dedicated patching cabinets. Each of the patching cabinets is presented to every one of the four rows with LANmark-6 10G cabling. The use of a fully screened solution for high bandwidth requirements was recommended to ensure that there would

## Challenges

- Complex set of requirements
- 100% reliability is essential
- Remote location
- Specific cable management needs

## Solutions

- Environmental Monitoring, Power Monitoring and Control, Access Control
- LANmark-6 10G screened cabling system
- LANmark-OF3 (OM3) fibre-optic system
- LANsense remote management
- Total of 2150 rack-to-rack connections
- Total of 1632 copper cross-connect connections

## Benefits

- Pre-termination for easier, and quick deployment
- High speed 10G Ethernet can be deployed everywhere
- Flexibility for future change and scalability
- Full remote management capability
- Power consumption information to support Green IT initiatives

be no concerns about alien crosstalk and to make the overall installation and testing easier. In particular there would be no need for time-consuming and costly Alien Crosstalk testing.

In addition, in each of the four main rows, cabinets 1, 7 and 14 have LANmark-OF3 (OM3) fibre-optic links. This enables any server that requires higher performance (such as 10 Gigabit or similar) to be patched into the higher speed link. INS also installed copper links direct from the patching row into the 800 network switches that are also installed in the data centre. In total there are 2150 rack-to-rack connections and 1632 copper cross-connect connections as well as a number of fibre backbone links. INS has also installed Nexans single-mode fibre on the backbone to provide high-speed connections to the multiple external communications lines in the meet-me rooms.

**“With some manufacturers you can get the solutions, but you can’t always get the support. Nexans provides all the elements you need, the pre-sales and on-site support, so you can’t go wrong.”**

INS’ Project Manager

This elaborate infrastructure gives the customer tremendous flexibility. With full remote management being provided through LANsense Infrastructure Manager (IM), equipment performance can be controlled and optimised from the main IT centre to meet its changing requirements and provide scalability. This is vitally important as any problem that might develop in such a mission-critical data centre needs to be identified and addressed immediately. LANsense IM also provides full asset management and reporting, interfacing with EMAC rack monitoring units as well as enhanced access control and security for the area.

Installation took place over a period of only one month, in which time all cables and infrastructure was fully installed and tested by INS. In order to minimise site congestion and reduce on-site installation times, INS pre-terminated the majority of cabinet links in their off-site cabling facility and shipped them to site on protected cable drums ready to install, on a ‘just in time’ basis.

### Best-in-class solution

Nexans had the ability to meet the extensive requirements that INS and its customer had in this case – for different types of cabling solution, for pre-terminated cables and technical design support. The availability of a best-in-class solution for remote management in LANsense, was also key to the success of the project as it provides the customer with complete visibility of active devices, components and connections, enabling IT administrators to manage the network from a distance, optimise performance and minimise the risk of any problems developing.

The result for the customer is a highly efficient remote data centre that meets all the IT objectives of the organisation. “Once everything is installed, it is all managed through remote access”, notes INS’ Project Manager. “If there is an issue needing equipment access, an engineer can go to the site and the cabinet can be opened remotely – and only that cabinet – so problems are managed efficiently. Changes to patching are updated in the database in real time, both viewable on site and at the main location via the LANsense software.” The ability to control an individual power socket is an important additional level of security – if an unauthorized device is connected to a power socket which is turned off then it cannot be powered up without IT being aware.

For INS itself and for the customer, the ease of deployment and the trusted reliability of Nexans Cabling Solutions implementations were also key, INS concludes. “Nexans is such a large and well-established supplier and you need trusted solutions for an installation as intricate as this one.”



With energy as the basis of its development, Nexans, the worldwide leader in the cable industry, offers an extensive range of cables and cabling systems. The Group is a global player in the infrastructure, industry, building and Local Area Network markets. Nexans addresses a series of market segments from energy, transport and telecom networks to shipbuilding, oil and gas, nuclear power, automotive, electronics, aeronautics, handling and automation. With an industrial presence in 39 countries and commercial activities worldwide, Nexans employs 23,500 people and had sales in 2008 of 6.8 billion euros.

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In addition to LANmark™ brand cabling systems, Nexans also specialises in LANsense™ Intelligent Infrastructure Management (IIM) products including Environmental Monitoring and Access Control (EMAC) devices.

Nexans offers an unrivalled choice of LAN infrastructure solutions to a global customer based through an extensive network of regional offices and Key Account Management team.

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