

CABLING FOR THE FUTURE

Innovate

THE SIEMON COMPANY NEWSLETTER | MARCH 2013

Supporting High Speed Applications:

**Top reasons to specify
Siemon fibre Plug and Play** P04

Laying the Foundations for Big Data:
Siemon fibre supports
processing for CERN

 P14

The Great Cable Debate:
John Siemon evaluates UTP vs
STP for 10GBASE-T networks

 P08



Have you seen the light?

Industry leading Fibre Plug and Play solutions from Siemon with performance margins up to 60%

Fibre has become the media of choice for high performance storage and backbone applications in the Data Centre.

Now is the time to consider whether your current fibre optic network is providing the performance and value that your Data Centre so critically needs.

To learn more visit
www.siemon.com/plug-and-play



CONNECTING THE WORLD TO A HIGHER STANDARD

In this issue...

Click on what you would like to read or simply turn the page to read more.

P04



PRODUCT SPOTLIGHT
Top reasons to use Siemon fibre Plug & Play.

P06



SFP+ INTEROPERABILITY
Independent tests prove Siemon's SFP+ cable assemblies interoperability.

P07



MAPIT® G2 INTERCONNECT LAUNCH
Siemon adds Interconnect capability to its MapIT® G2 intelligent infrastructure range.

P08



NEWS
John Siemon on The Great Cable Debate.

P12



HOSTED, OUTSOURCED, AND CLOUD DATA CENTRES
Strategies and Considerations for Co-Location Tenants.

P14



CASE STUDY
Siemon fibre supports processing for CERN at PIC data centre.

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Issue Archive

Innovate

01



Innovate

02



Innovate

03



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Top reasons to use Siemon fibre Plug and Play assemblies

Siemon has the best performing OM3 and OM4 Multimode and Singlemode solutions with industry-leading performance margins up to 60%.

▶ Siemon's Plug and Play margins help ensure standard-compliant test results in installed systems. In other systems, contamination introduced in the field as well as testing inconsistencies due to varied test equipment and reference cord quality can make it difficult to ensure that the consistent performance levels of factory-terminated fibre assemblies are maintained when installed in the field.

▶ Siemon performs 100% automated end-face inspection of all interfaces to IEC 61300-3-30 Ed 1.0 to limit contaminants and surface defects that significantly degrade system performance.

▶ Siemon tests for Insertion Loss and Return Loss in both directions for both 850 and 1300nm wavelengths. All test data is included with the product.

▶ Siemon provides factory launch conditions on the accuracy of Multimode fibre Insertion and Return Loss test results.

▶ Factory Terminated and Tested assemblies can be deployed up to 90% faster than traditional field termination methods.

▶ All Siemon LC and SC adapters utilize high-quality ceramic alignment sleeves in both Singlemode and Multimode configurations. These ceramic sleeves deliver tighter tolerances and greater durability than traditional phosphor bronze sleeves for improved fibre-to-fibre mating alignment and wear resistance.

“Siemon's RazorCore fibre cable with 12-fibre MTP connectors delivers the industry's smallest diameter Plug and Play assembly”

▶ All Siemon MTP connectors passed IEC 61300-3-30 Ed 1.0 testing for performance critical fibre end-face geometry. Independent third-party testing by Experior Labs confirms 40Gb/s and 100Gb/s-readiness and performance margins in accordance with the latest IEC 1280-4-1 Edition 2 and TIA/EIA-455-171A standard.

▶ Siemon meets Encircled flux compliance reducing test variability by up to 75% versus previous test methods, ensuring more accurate results and helping eliminate false pass results that can degrade overall network performance. The latest IEC and TIA/EIA testing procedures use new Encircled Flux methods, which limit the negative impact of variable

▶ All Siemon Plug and Play modules and cable assemblies exclusively feature high-performance USCon MTP connectivity.

▶ Simple, efficient and green - No connectors, termination kits, consumables or onsite scrap or waste.

and Play

emode Plug and Play fibre

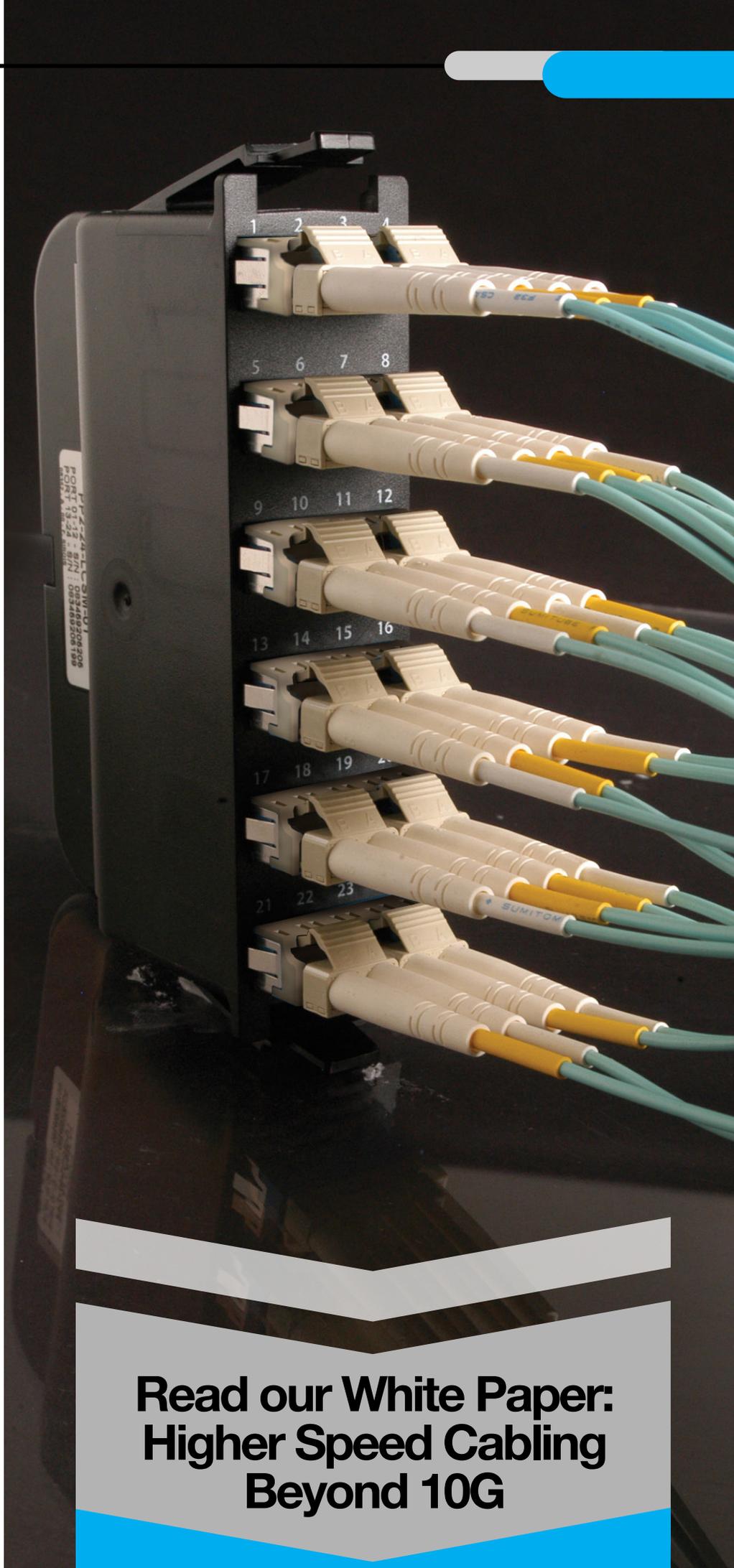
▶ Low profile, lightweight Plug and Play modules provide optimised adapter spacing for easy fibre access to fibre jumper latches in high density patching environments.

▶ Siemon's RazorCore fibre cable with 12-fibre MTP connectors delivers the industry's smallest diameter Plug and Play assembly for reduced pathway utilisation and improved air flow.

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Products include:

- MTP to duplex LC modules
- MTP to duplex LC trunking cable assemblies
- MTP (male) to MTP (female) extenders
- MTP pass-through adaptor plates
- MTP to MTP cable assemblies
- MTP and duplex cleaning tools
- Duplex LC fibre jumpers
- 24-288 port fibre enclosures
- Vertical patch panels for VersaPOD
- 96-port 1U enclosure



Read our White Paper:
Higher Speed Cabling
Beyond 10G

Independent tests prove Siemon's SFP+ cable assemblies interoperability with leading vendors' 10Gigabit Ethernet equipment

IT Infrastructure specialist Siemon has announced that in independent testing its high speed SFP+ direct attached passive copper cables have all passed 10 Gigabit Ethernet interoperability.



The testing, conducted by the University of New Hampshire's Interoperability Lab (UNH IOL) confirmed interoperability with several vendors' devices, including Brocade, Dell, Cisco, Mellanox, Arista, Arastra and F5.

The testing report from UNH IOL includes seven different SFP+ devices and five Siemon cable lengths, from one to seven metres long. Five different link tests were performed, employing various combinations of powering-up the

devices under test. UNH's finding was that all the Siemon SFP+ cables passed interoperability testing, returning an A grade result in every single test. In addition, a Packet Error Ratio Estimation test was run to determine if any packets were lost and in every case there were no errors reported.

Explaining the choice for external validation, Dan Vout, Siemon's marketing manager for EMEA, commented, "This interoperability testing is part of our on-going

programme to certify that our cables are suitable for use across a broad range of high speed networking equipment, including some equipment that may have required use of proprietary and higher cost assemblies. It will give real confidence to anyone selecting supporting infrastructure that the interoperable performance of our cables will maximize the active equipment investment."

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Siemon adds Interconnect capability to its MapIT® G2 intelligent infrastructure range

Siemon, the global infrastructure specialist, has launched the MapIT G2 Copper Interconnect System.

This network management innovation is an extension and enhancement to the MapIT G2 Intelligent Infrastructure Management (IIM) solution and offers a more cost-effective option, which simplifies installation. This system gives complete visibility and control of the entire physical layer network, enabling the tracking and monitoring of ports in real time and management of network documentation.

With the MapIT G2 copper Interconnect, both material costs and installation time are reduced by 17 per cent, when compared with a cross-connect configuration. In this interconnect topology, switch ports are connected from the switch directly to the smart copper patch panel, eliminating

the cost of a second copper patch panel and the related patch cords used in a traditional cross-connect configuration.

The Interconnect Control Module (ICM) is an important part of the Interconnect solution: This hand-held Ethernet device creates a software-based link between the switch port and the smart patch panel port. The ICM discovers the switch side of the patch connection and, through a few simple steps, recognises the successful connection to the smart panel, verifying the data on the LCD display. This device is used by technicians during initial installation and when making subsequent moves, adds and changes (MACs).

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“MapIT G2 radically reduces power consumption, using 75 per cent less power than other IIM systems for a clear ‘green’ advantage.”

John Siemon on The Great Cable Debate

In a recent issue of Network Middle East magazine, the cover story was “The Great Cable Debate: Two cabling giants debate whether UTP [unshielded twisted pair] or STP [shielded twisted pair] cables are best for 10GBASE-T networks” get an insight into Siemon’s stance here.

John Siemon, Chief Technology Officer and Vice President Global Operations, Siemon, took the side of shielded cabling in the debate. Mr. Siemon makes it clear that shielded cabling is better for support of 10GBASE-T networks than UTP cabling.

In the Network debate, Mr. Siemon explains the benefits of using shielded cabling systems in 10GBASE-T networks. Here are a summary of key points:

- ▶ Superior electromagnetic (EMC) performance; experimental and theoretical results prove that shielded systems offer 100x better noise immunity than UTP systems.
- ▶ Superior immunity against interference from RF transmitters and wireless devices at high frequencies (e.g. >30 MHz) where the balanced transmission performance of UTP cables begins to degrade.
- ▶ An overall shield is the most effective deterrent to alien crosstalk because it serves as a barrier that reduces electromagnetic emissions from within the cable and blocks interference from other cables.
- ▶ Superior heat dissipation for support of heat generating applications such as PoE Plus remote powering applications when installed in spaces that are not environmentally controlled.
- ▶ Reliable performance at ambient temperature up to 60°C is an important consideration – especially in warmer climates.
- ▶ More stable temperature response enables full standards compliance to category 6A insertion loss requirements for longer channel lengths than unshielded cabling when operating at temperatures greater than 20°C.

▶ Virtually identical termination methods between unshielded and shielded components means equivalent installation time.

▶ More efficient pathway utilization based on lower cable diameter and no restrictions on pathway sharing or bundling of different cable categories and media types as prescribed by industry standards for UTP.

“Without question, shielded cabling is better for support of 10GBASE-T. This application is primarily deployed in data centres where cable density is typically high and temperatures can exceed 20°C.”

John Siemon



Mr. Siemon also made the following points about the drawbacks of using UTP cabling systems in 10GBASE-T networks:

- ▶ Sensitivity to alien crosstalk being introduced through mishandling or poor installation practices.
- ▶ Higher potential need to perform time-consuming and complex field testing for alien crosstalk to trouble shoot UTP channels.
- ▶ According to TIA TSB-190, UTP cabling supporting non-10GBASE-T applications (e.g. 100BASE-TX and 1000BASE-T) should not be placed in the same bundle with UTP cabling supporting the 10GBASE-T application.
- ▶ Length de-rating based on higher temperatures can reduce UTP lengths for full compliance to category 6A insertion loss requirements.
- ▶ Higher temperature rise and thermal loss when used for PoE Plus remote powering.

The Siemon Company provides an online resource centre on the topic of shielded cabling. The shielded copper cabling resource centre is an exploration of the benefits, advantages and myths surrounding today's shielded network cabling solutions.

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THE DATA CENTRE IS HERE

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- Cabling options and standards
- Power and cooling
- Siemon's Data Centre Ecosystem

For more information on our seminars and partnership opportunities

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CONNECTING THE WORLD TO A HIGHER STANDARD



Strategies and Considerations for Co-Location Tenants

Hosted data centres, both outsourced/managed and collocation varieties, provide a unique benefit for some customers through capital savings, employee savings and in some cases an extension of in-house expertise. Traditionally, these facilities have been thought of as more SME (Small to Medium Enterprise) customers. However, many Global 500 companies have primary, secondary or ancillary data centres in outsourced locations. Likewise, collocation data centres are becoming increasingly popular for application hosting such as web hosting and SaaS (Software as a Service), Infrastructure as a Service (IaaS), Platform as a Service (PaaS) in Cloud computing. These models allow multiple customers to share redundant telecommunications services and facilities while their equipment is colocated in a space provided by their service provider. In house bandwidth may be freed up at a company's primary site for other corporate applications.

Hosted and outsourced/managed data centres are growing rapidly for both companies' primary and hot site (failover ready) data centres, redundant sites and for small to medium enterprises. Similarly outsourced data centre services are on the rise and allow a company to outsource data centre operations, locations, saving large capital requirements for items like generators and UPS/ Power conditioning systems and air handling units. As data centre services increase, many providers can supply one or all of these

models depending on a tenants needs.

Outsourced Data Centres

In an outsourced data centre, the tenant basically rents some combination of space, talent and facilities from a larger facility provider for all or part of their corporate applications and data centre operations. There are several pricing options including per port, per square foot, and for power consumed, but in general a combination thereof. With power costs and demand on the rise,

most newer contracts include a fee that is assessed when a tenant's kilowatt threshold is exceeded, or by power supplied. In the latter case, a tenant typically pays for more power than they need as power is averaged across the square footage of the tenant space.

Outsourced data centres are an attractive option for companies that have a myriad of platforms and applications alleviating the need for constant multivendor training and upgrades, patches, hardware changes, software platform

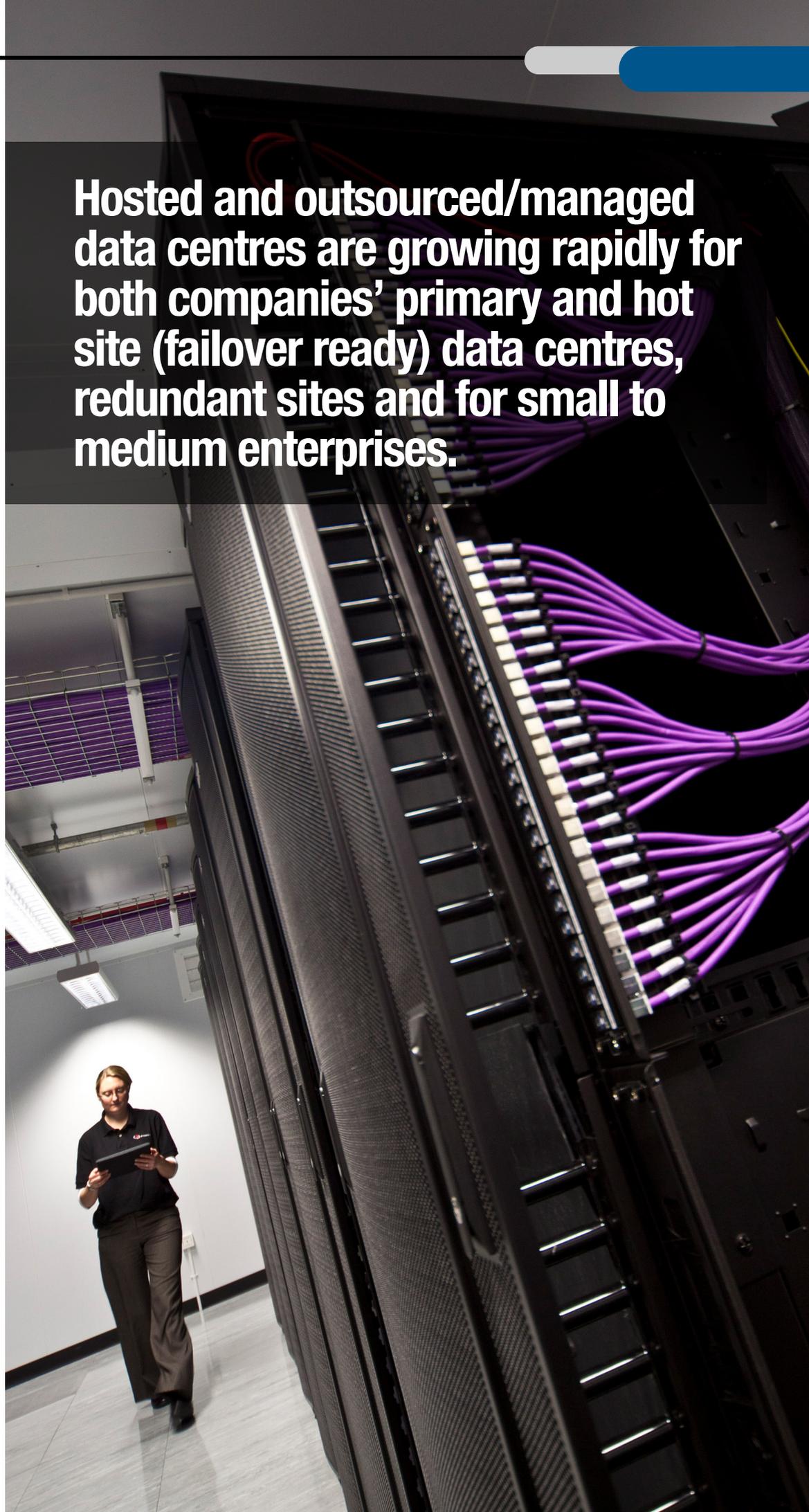
changes, etc. In a typical company environment that has migrated from mainframe type applications to several server platforms just the cost and time for training can be a manpower and financial drain. As outsourced (managed) data centres have the needed expertise on site. A company utilising this type of model will see a shift in employee responsibilities from IT/upgrade tasks to more fruitful and beneficial tasks. Outsourced data centres may be for a sole tenant or multi-tenant, and in the case of the latter will share the same concerns as the collocation facilities below.

Collocation Facilities

Collocation facilities are typically divided into cages, cabinet space or in some cases, subdivided cabinets to accommodate smaller computing needs. As a collocation owner, division of space is a prime consideration. While these environments tend to be fluid, critical infrastructures (cabling, cages, power and cooling) that can remain unchanged provide advantages to the owner and tenants alike. There are very few existing outsourced locations that have not felt some pain over time as tenants move in and out leaving cabling messes in pathways that can be detrimental to air flow and cooling.

Hosted and outsourced/managed data centres are growing rapidly for both companies' primary and hot site (failover ready) data centres, redundant sites and for small to medium enterprises.

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CASE STUDY

Siemon for CERN

Global infrastructure specialist, Siemon, has been selected by the Port d'Informació Científica (PIC) to upgrade its scientific data centre to OM3 fibre for future migration to 40/100 Gb/s.

This 'data centre of excellence' is responsible for processing and storing scientific data from research groups around the world and includes CERN in its client list. Its growing needs mean that data throughput demands are rising from 15 to 100 PB

PIC is located near Barcelona in Spain and from here this ultra-high performance site serves national and international scientific groups belonging to public and private institutions. Strong computing resources are housed here for the analysis of massive sets of distributed data, including experimental data from CERN's Large Hadron Collider, which is processed and analysed at the institute.

The team at Port d'informació Científica support groups working in projects that require strong computing resources for the analysis of massive sets of distributed data.

fibres supports processing N at PIC data centre

The data centre needs to handle approximately 9 Petabyte of data per year and its highest priority applications include high energy physics, astrophysics, cosmology and medical imaging. PIC transfers the technologies for data management to other fields of research and is a Tier One 'centre of excellence' that enables Spain to participate in European projects for the development of the International GRID Infrastructure for science and technology.

The massive sets of data processed and stored at PIC recently necessitated re-evaluation of the site's entire IT

infrastructure. An upgrade of both the active equipment and cabling infrastructure was ordered, to create a future-proof facility that will rapidly respond to growth. PIC plans to migrate to 40/100 Gb/s and asked Siemon to develop a new structured cabling architecture for the data centre that will support this progress.

An end of row configuration was proposed by Siemon; placing the switching at the end of the row of racks, with patch panels allowing every server to be connected to any port of the switch. This design enables optimised utilisation of switch ports and has lowered

overall switching costs for PIC, plus has freed up valuable rack and pathway space.

OM3 MTP plug and play fibre cabling and fibre trunks from Siemon were specified by PIC, to reduce the total number of cables required and facilitate the fastest possible installation. A single MTP module replaces every 12 individual fibre connections and so this fibre choice automatically created space which, in turn, allowed for greater density of active equipment.

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“We need to be fast and agile, with flexible capacity, to serve the needs of both our existing and future users. Siemon has provided expert help to ensure that our data centre can operate dynamically and we are most impressed with both the intelligence of the design, plus the quality and performance of the fibre solution.”

IT manager at PIC, Vanessa Acín

New from the Siemon Blog

The TIA Great Cat 8 Debate.

After debating the issue for three meetings cycles, the TIA TR-42.7 Copper Cabling Subcommittee has adopted “category 8” as the name of their next generation balanced twisted-pair cabling system that is currently under development to support 40Gb/s transmission in a 2-connector channel over some distance shorter than 100 metres.

The issue of what to call this new system was a subject close to the hearts of many subcommittee members and both proponents and opponents of the new name argued tenaciously for their positions. However, the real question is just how much confusion the name category 8 is going to cause for the industry.

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Yes, IT Manager, There is a Category 7A— And it Shares Better.

IT managers and end users who recently learned about TIA’s latest “category 8” can rest assured that there is indeed an existing standards-based category 7A.

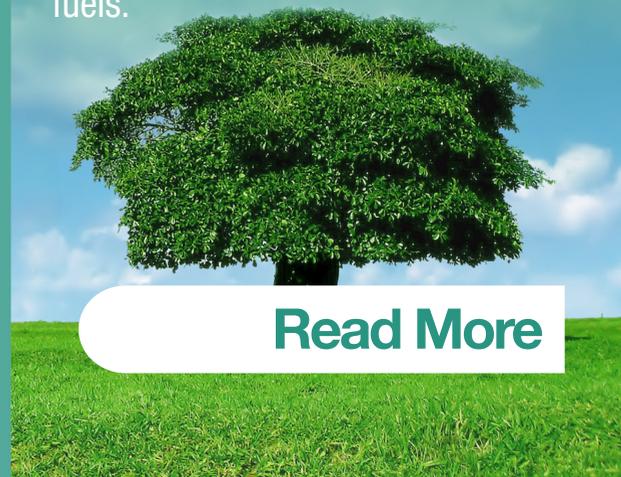
After much debate, the Telecommunications Industry Association (TIA) TR-42.7 Copper Cabling Subcommittee recently adopted “category 8” as the nomenclature of their next generation balanced twisted-pair cabling system to eventually support 40 Gigabits per second (Gb/s) in a two-connector model at some distance shorter than 100 metres (m).

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New TIA Subcommittee will address IT Sustainability.

All recently published TIA TR-42 Standards contain a new “Stewardship” clause as part of their Foreword text. This is the TR-42 Telecommunications Cabling Systems Committee’s way of raising awareness that:

- ▶ telecommunications infrastructure design and installation affects raw material consumption, which in turn affects our environment
- ▶ the life cycle of a building’s cabling infrastructure is typically several decades
- ▶ telecommunications designers should consider sustainable infrastructure designs that take into consideration building lifecycle, electronic equipment lifecycle, effects on environmental waste, and practices that conserve fossil fuels.



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Siemon introduces XGLO™ RazorCore™ fibre trunking assemblies

Siemon, a leading global network infrastructure specialist, has expanded its comprehensive line of fibre trunking solutions with XGLO™ RazorCore™ assemblies. Siemon's RazorCore cables have a significantly reduced cable outside diameter (OD) for maximum space savings and optimized air flow.

Available in OM3 and OM4 laser-optimised multimode fibre and in singlemode fibre, XGLO RazorCore assemblies provide an efficient, cost-effective alternative to individual field-terminated components. By combining the performance of factory termination with the reduced OD of Siemon's RazorCore fibre, these new assemblies ensure both superior reliability and space utilisation

in data centres, Storage Area Networks (SANs) and Local Area Networks (LANs), while offering up to 75 per cent faster deployment over traditional field termination. Compatible with all Siemon fibre enclosures, the new XGLO RazorCore assemblies feature an optional encapsulated protection sleeve with cable pulling eye to fully protect the fibres during installation.

“When selecting a fibre optic solution for our data centres, we wanted a solution that was fully scalable and allowed for the maximum density possible,” says customer Jean François Tremblay, data centre manager at Orange Business Services (a subsidiary of France Telecom), who recently installed XGLO RazorCore fibre trunking assemblies.

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Innovate Survey: One year on

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