



# COMMUNICATOR

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## Good Cable Management: Taking it to Heart



The way in which fiber optic cables are routed, terminated and maintained affect network performance as well as the cost of ownership.

The following problems and solutions relate to key areas of cable management.

### 'Messy' Interconnects

The interconnect rack is the heart of an enterprise computer network. The interconnect is where cabling from network devices such as servers, routers and switches converge, enabling devices to communicate with one another.

Typically, new devices and cabling are added over the years to accommodate network growth. This piecemeal approach can lead to a confusing jumble of misidentified cables within the rack space that makes system maintenance difficult and can degrade network performance.

*Solution* - Interconnect systems are now available that have high-density ports that enable a large number of network devices to be connected in a more organized and efficient manner. (See centerfold)

### Bend Radius

Fiber optic cables suffer signal loss when bent too sharply. Although "bend-insensitive" fibers have been developed in recent years, not every network has these newer fibers installed. With older legacy fiber, care must be taken to ensure that the rated minimum bend radius of the cable is maintained.

*Solution* - Cable raceways and ducts tend to have sweeping curves that can help cable to maintain bend radius requirements.

### Cooling

Excessively long patch cables, when draped over equipment racks, inhibit cooling of active equipment and can cause a network to fail. To control overheating, technicians sometimes turn down network clock speeds. Unfortunately, this also slows down the network!

*Solution* - A far better remedy is to fix the core problem by reducing the excess cabling in the rack space that impedes air circulation to active equipment. Custom patch cords, cut to size, help solve the problem. (See centerfold)

### Site Surveys

Some network operators are lax in performing preventive measures that could prevent system crashes before they happen.

*Solution* - Conduct periodic site surveys. Tour the network and visually examine each cable and connector. You can also use test equipment to compare current link performance with benchmarks that were recorded when the link was first installed. If there is significant optical loss, suspect a faulty cable or connector.

### Define Cable Paths

An older network may have cables installed in drop ceilings, under floors and within wall partitions. These multiple cable paths make it exceedingly difficult to access cables for repair or to implement consistent cable management practices.

*Solution* - When installing or upgrading a network, carefully plan your cable paths. Well defined cable paths can eliminate the need for technicians to develop their own creative cable routes.

**Inside - Custom Interconnects from FIS, *The Solutionists!***

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**Steve Ermacor**

FIS Region 2  
Sales Associate

## FIS has the Solution

FIS can make your interconnect system neat, tidy, and efficient! We offer high-density enclosures and racks that can accommodate most, if not all, of your interconnects on a single rack.

FIS can also pre-load your custom rack with Splitters, Couplers, CWDM Modules, MPO/MTP Cassettes, LGX Adapter Panels, Pigtails, Snap Packs and more.

### Custom Interconnect Solutions

FIS' extensive resources facilitate a fast concept-to-product development cycle. FIS will design, manufacture and customize products to meet the needs of your large or special projects.

Any enclosure, either stock or custom built, can be loaded with fiber, connectors, and cable management solutions. CWDM modules, high count fiber couplers, and MTP assemblies are all configurable and can easily be pre-installed within the enclosure.

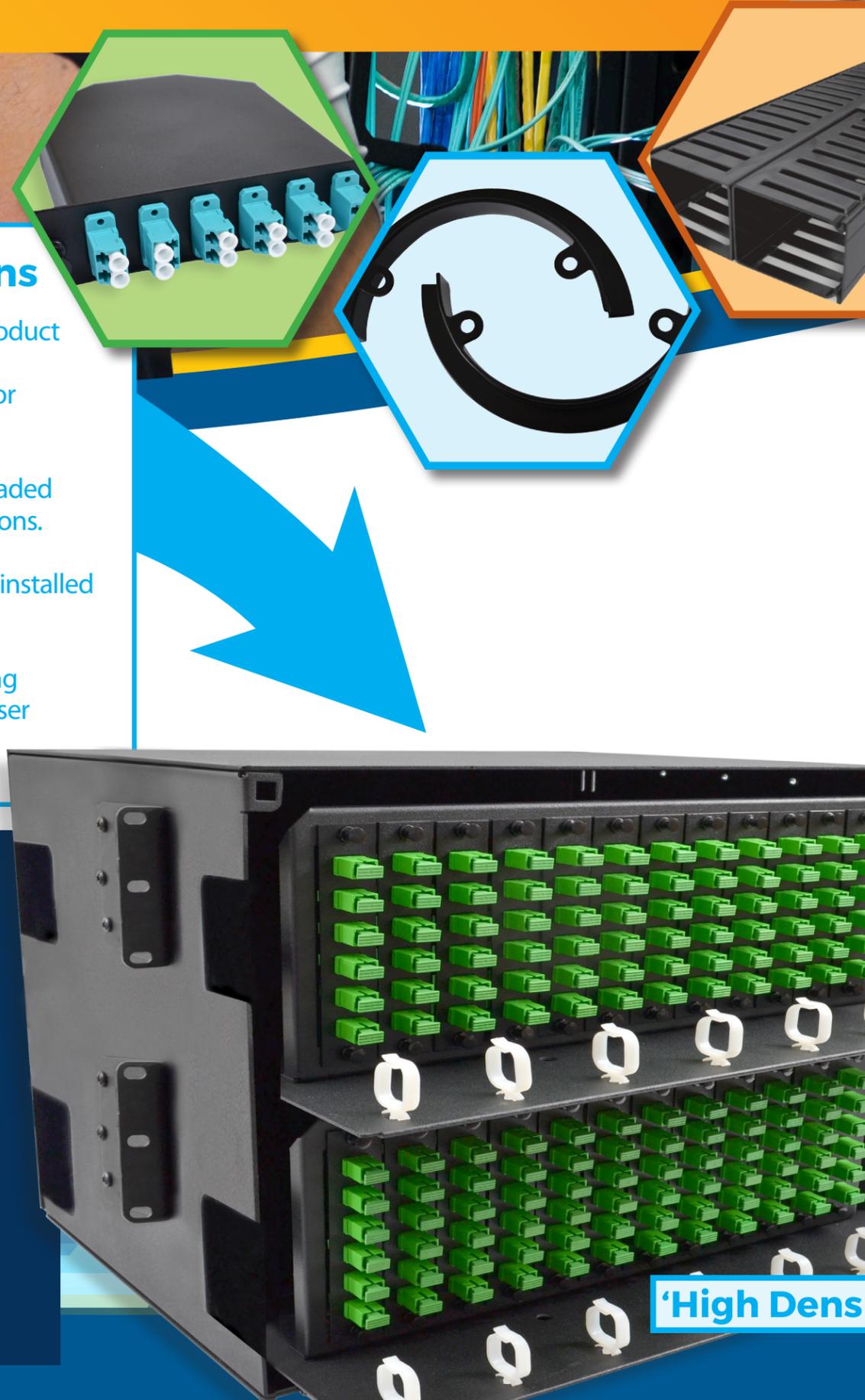
Feature your unique brand on FIS enclosures by taking advantage of customized silk screened logos, vivid laser etched designs, and a variety of powder coat colors.

### Who Can Benefit?

**IT Departments** - Racks are available in various Rack Unit (RU) heights and configurations and can accommodate both new and existing equipment that you may wish to retain.

**Telco's** - We can custom manufacture CPRI interface panels for your cell towers, as well as interconnects for your equipment at the head end.

**Large Data Centers** - We can custom manufacture racks and interconnects that match your existing equipment in look, form function.



'High Dens

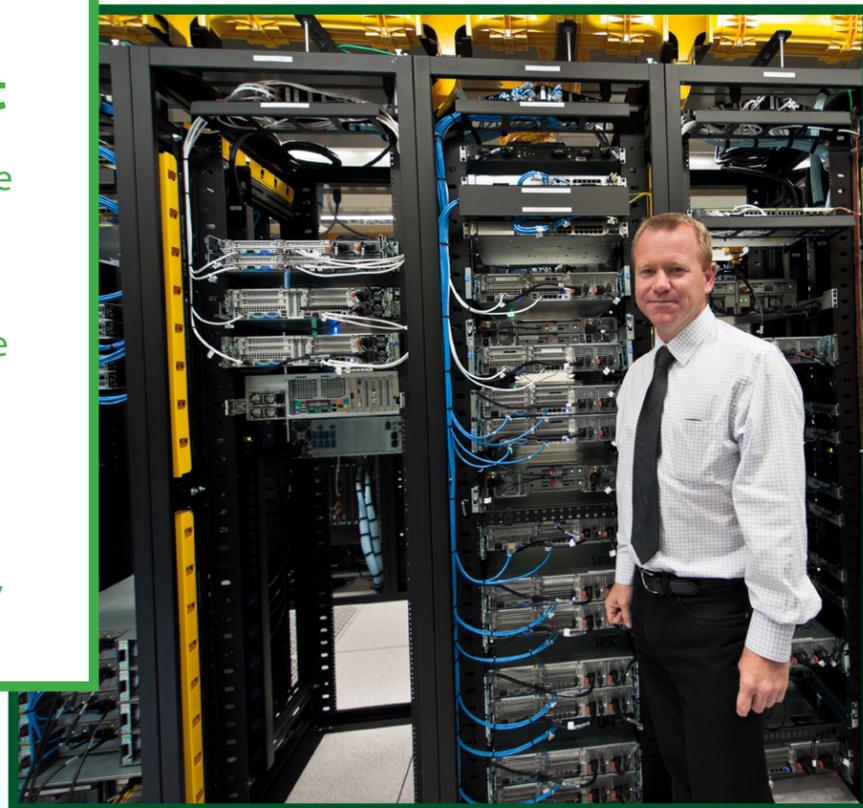
# Cable Management Solutions From The Solutionists



## FIS Cable Assemblies Promote Good Cable Management

One way to achieve dramatic improvements in your rack space is to use patch cables that are sized to fit. FIS can provide you with pre-polished connectors and patch cables built to your specifications. Simply specify cable length, fiber type, fiber count and connector style. You'll receive your completed cable assemblies in as little as 2-3 days.

Our expert technicians can build custom cable assemblies ranging from 1-fiber patch cables to 144-fiber assemblies. FIS cable assemblies are 100% inspected and tested to industry standards. Contact your FIS Sales Associate for pricing and any other assistance you may need.



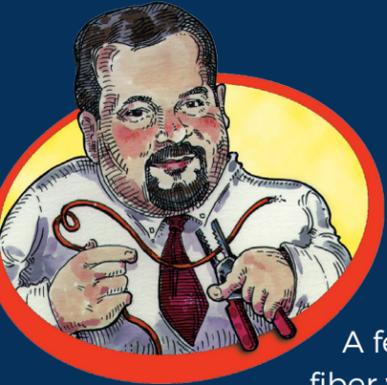
**Cable Management In The Rack Space** Good cable management is especially important for Data Centers. FIS provides complete rack systems, interconnects and cable assemblies that help ensure optimal performance.

**Patch Cables**

**ity' Enclosures**

# ASK BRUNO

John Bruno, V.P. of Technical Services



“I have heard the term OM4+ recently. What can I expect from that cable? Is it a new standard?”

A few fiber manufacturers are offering fiber with an OM4+ designation. OM4+ is not an industry but just an enhanced offering of the 50/125 OM4 standard multimode. The reason for the new product is to promote longer distances when deploying 40 Gbps and 100 Gbps Ethernet. Standard OM3 multimode will give you about 100 meters of distance with OM4 multimode squeaking out another 50 meters for a maximum distance of 150 meters. All indications are that the OM4+ product will give you about 300 meters of distance using 40 Gbps Ethernet. It is still to be decided how 40 Gbps and 100 Gbps will be used with multimode fiber. Will we use WDM (Wavelength Division Multiplexing) or Multichannel fibers with MPO connections? Stay tuned.

# FIS UNIVERSITY

PREMIER FIBER OPTIC EDUCATION

## UPCOMING TRAINING DATES

### Fiber Optics I and II – Two Days

- November 7-8 | Chicago, IL
- November 9-10 | Indianapolis, IN
- November 16-17 | Cleveland, OH
- December 5-6 | Boston, MA
- December 7-8 | New York City, NY
- January 9-10 | Tampa, FL
- January 11-12 | Orlando, FL
- January 24-25 | Philadelphia, PA
- February 13-14 | Dallas, TX

View full curriculum and register online at [www.fisuniversity.com](http://www.fisuniversity.com)



Further questions? Contact Grace Edel at 1-800-5000-FIS (347) ext. 2169, or email [gedel@fissales.com](mailto:gedel@fissales.com)

### Fiber To The x – One Day

- November 9 | Knoxville, TN
- December 14 | Orlando, FL
- January 18 | Albuquerque, NM
- February 15 | Sacramento, CA



To receive your free Alumni card, visit [www.fisuniversity.com](http://www.fisuniversity.com) and click on **Alumni Advantage**



## PRODUCT OF THE MONTH

VELCRO® Brand ONE-WRAP® for Optical Fiber Cable



\$23.95 Each  
Roll is 3/4" x 25



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# Serving Customers Around the Globe



FIS is a manufacturer and distributor that serves over 11,000 customers in 90 countries.

What's the secret to the company's global success? "FIS has earned a reputation for quality products and service both at home and abroad," said Shaun Murray, FIS International Sales Director.

To help guide the company in its continued growth, FIS recently brought on board Peter Jones, an expert in foreign markets. Peter is FIS' Vice President of International Sales.

(From left to right) Peter Jones, Shaun Murray, Mike Excell, Sonia Eysaman, Kayla Angelhow, Maryjo Marino, and Kim Inman