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#63 EDITOR

Imagine working on a wire 60,000 times thinner than a human hair. Well that is exactly what microbiologists at the University of Massachusetts, Amherst, are making. The microbial nanowires are produced by genetically modified soil bacteria, and researchers manipulated the bacteria to spin out very fine, highly conductive wires composed of amino acids.

“We are very excited about the possibilities for synthetic biological wires,” Dr Derek R Lovley wrote in an email statement. “It is expected that the biowire will be incorporated into various polymer materials to make new types of biocompatible flexible electronics and even new types of devices for harvesting solar energy.” You can read the full story on page 9.

From one eye-watering figure to another. ArcelorMittal South Africa has been fined approximately \$100 million, believed to be the largest fine for anti-competitive behavior imposed on a single company in South Africa's history, by the competition commission.

The commission said Arcelor had admitted to its involvement in long steel and scrap metals cartels, but denied allegations of collusion in the flat steel and wire rod markets. The commission confirmed that the imposition of the fine brings all proceedings against the company to an end. Full details can be found on page 35.

David Bell
Editor

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DIARY SHOW EVENTS

2016

SEPTEMBER

26-29 September 2016

wire China

Shanghai, PR China

Exhibition

www.wirechina.net

OCTOBER

2-5 October 2016

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www.iwcs.org

OCTOBER

5-7 October 2016

Wire & Cable India

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Exhibition

www.wire-india.com

2017

MARCH

23-25 March 2017

TEL

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Exhibition

www.voli.com.tr

MAY

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MAKING THE NEWS

Finest of fine wires?

Microbiologists at the University of Massachusetts Amherst are making electrical wires that are thousands of times thinner than a human hair.

Microbial nanowires are produced by a genetically modified soil bacteria, *Geobacter sulfurreducens*. Researchers manipulated the bacteria to spin out very fine, highly conductive wires composed of amino acids.

Two naturally occurring amino acids in the *Geobacter* bacteria were replaced with tryptophan, and not only was the result 2,000 times more conductive, the “wire” became smaller and more durable, with a diameter of 1.5 nanometers (about 60,000 times thinner than a human hair).

Dr Derek R Lovley, the team’s lead researcher, said that the wires can

be sustainably produced from inexpensive materials, such as acetic acid.

“We are very excited about the possibilities for synthetic biological wires,” he wrote in an email statement. “...It is expected that the biowire will be incorporated into various polymer materials to make new types of biocompatible flexible electronics and even new types of devices for harvesting solar energy.”

The experiment was funded by the office of naval research, but there are many potential uses for the nanotechnology other than military applications, particularly in the health and medical sector.



New route shows strong demand

Zayo Group Holdings has announced 12 follow-on customers for its Sacramento to Salt Lake City route. Zayo completed construction of the 970-mile route in late 2015.

The follow-on sales are to three long-haul dark fiber and nine wavelengths customers, including major carriers, Internet and content companies. In aggregate, the combined sales are generating a strong return with a cash flow yield of approximately 29 percent.

The Sacramento to Salt Lake City route complements Zayo's existing long-haul network and enables diverse connectivity for enterprise, carrier, cable and content companies between major west coast

data center markets such as Los Angeles, Seattle and the Bay Area to the rest of the country.

"This route is generating significant customer momentum, especially with west coast content customers," said Dave Jones, executive vice president of dark fiber solutions at Zayo. "It's a unique route, which provides critical diversity. Zayo now provides four diverse paths from the west coast to Chicago, with access to our global network and infrastructure."

With the completion of this route, Zayo's long-haul dark fiber network spans approximately 30,000 route miles across North America and Europe.



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Network crossing continents

Infinera has successfully deployed its DTN-X XTC series across Middle East and North Africa (MENA) Submarine Cable System's subsea network. The Infinera DTN-X XTC series integrates the subsea network connecting the Mediterranean and Middle East regions, with MENA's existing Infinera terrestrial network. With the Infinera DTN-X XTC-10, MENA can quickly deploy increments of 100Gb/s of bandwidth, managing costs as it scales the network capacity.

MENA owns and operates a submarine telecommunications system between Europe, the Middle East and southeast Asia. Spanning three continents, MENA's infrastructure provides wholesale capacity to global networks via Asia and the Middle East. With the upgrade of the Infinera Intelligent Transport network on its subsea route, MENA is equipped to provide wholesale carriers with a range of connectivity services from synchronous

transport module level-1 (STM-1) at 155Mb per second to 100Gb over terabit capacity cables.

The Infinera DTN-X XTC-10 allows MENA to deliver 100Gb/s of coherent transmission capacity via 500Gb/s super-channels, supporting a forward scale design to provide terabit super-channels in the future. The high capacity super-channels use photonic integrated circuits (PICs) developed and fabricated by Infinera - believed to be the only supplier currently delivering 500Gb/s of transmission capacity from a single line card.

"This subsea network upgrade integrated with MENA's existing terrestrial network enables MENA to deliver bandwidth quickly and efficiently on a critical route between Europe, Middle East and Arabian Gulf countries," said Kamran Malik, CEO at MENA.

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School supplies for students at Satchel Paige Elementary from employees at WireCo WorldGroup

Back (pack) to school for wire employees

Employees from Wireco WorldGroup recently delivered 150 backpacks, full of school supplies, to students at a local elementary school. About four times a year, the company gets involved in a community service project. The school, Satchel Paige Elementary, is just a ten minute drive from WireCo's head office in Prairie Village, Kansas.

"It's hard for me to express how grateful we are for this gift," said Lazona Stovall, summer acceleration program principal at Paige Elementary this summer. "A small gesture like this can make all the difference for our students. It will make their entire school year better."

"Being able to put those backpacks together for these students and seeing the joy on their faces when we delivered them was absolutely awesome," said Wireco employee, Tana Drake. "These are truly a great group of kids and they are going to go on to do wonderful things with their lives."

Backpacks will also be distributed to students at Gladstone, Banneker and Success Academy at Knotts elementary schools.

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CommScope's Richardson facility.
Photograph courtesy of RCR Wireless

Testing the tester

Wideband multimode fiber (WBMMF) allows IT and data center managers to build cost-effective infrastructure that can support the bandwidth needs of the future. Intertek has recently certified CommScope's WBMMF testing facility in Richardson, Texas, for its measurement setup and technique, stating: "It satisfies the current Telecommunications Industry Association's (TIA) standard TIA-455-220-A."

Intertek witnessed CommScope's differential mode delay (DMD) testing of WBMMF at 850nm, 880nm, 910nm and 953nm, marking what CommScope believes to be the industry's first confirmed successful test of wavelengths beyond 850nm. This is an important step in verifying fiber performance for emerging shortwave wavelength division multiplexing systems. Intertek stated that the fibers also meet the TIA-492AAAC, TIA-492AAD and TIA-492AAAE standards.

"This testing and certification validates CommScope's commitment to its

state-of-the art DMD testing capability, critical for new product development," said David Brown, senior vice president, research and development, CommScope.

Brown added the certification allows CommScope to continue developing WBMMF solutions. This, coupled with transceivers using wavelength division multiplexing and/or pulse-amplitude modulation technology, provides a path for CommScope customers to grow their fiber throughput capacity from 10G to 100G and beyond with maximum fiber reach and minimum fiber count, to keep pace with the increasing bandwidth demand.

Antoine Pelletier, project engineer at Intertek, confirmed: "CommScope's DMD bench met the measurement standard's requirements and properly graded the performance of fibers used in CommScope's LazrSPEED® cables, with respect to the TIA-492 series requirements."

Canadian project gets a green light

Construction is set to begin on the 75MW Amherst Island wind project, after an Ontario tribunal denied an appeal against its approval.

The provincial environmental review tribunal upheld a renewable energy approval that was granted a year ago. Amherst Island is located in Lake Ontario, 15km southwest of Kingston.


Canadian developer Algonquin Power now plans to start work on the project,

which includes 26 Siemens 3.2MW-113 turbines, a 34.5kV/115kV substation and a 4.5km underwater cable to the mainland and the Hydro One distribution system. Final development and construction is expected to take 12 to 18 months.


The wind farm, which is costing around \$211 million, is scheduled to begin commercial operation in 2018 and to produce 235GWh per year.

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The hills of Carabayllo.

Photograph courtesy of limaeasy.com

Fiber spread in Peru

Peru has launched its national optical fiber backbone network (RDNFO) project in Lima's Carabayllo district.

The 13,500km network aims to bring higher speed, lower cost Internet access to the provinces as well as improve state education and health services.

President Ollanta Humala said: "This great step forward towards optical fiber [implementation] opens up a new digital world," adding: "Thanks to this initiative, Peru will be able to enter the digital age."

Mr Humala announced that over 400,000 tablets will be acquired by the state to expand technology at national schools.

RDNFO is designed to interconnect 180 of the country's 196 provincial capitals, at a cost of \$333 million. The project was motivated by the demand for broadband services in the interior of the country, mainly in Peru's highland and jungle areas.

Construction wire acquisition

Keystone Consolidated Industries Inc (KCI) has acquired all of the outstanding capital stock of Strand-Tech Martin Inc (STM), of Summerville, South Carolina. STM is a producer of PC strand and industrial wire for pre-stressed concrete and post-tension markets, and manufactures PC strand and high carbon wire products for the construction industry.

Roberto de Miranda, on behalf of the seller, stated: "I am confident the capabilities and experience of KCI will ensure STM continues to successfully grow and supply customers with the highest quality products."

A significant amount of the high carbon steel rod feedstock for STM will be provided from KCI's Keystone Steel & Wire (KSW) mill in Peoria, Illinois, with the flexibility to utilize third party sources of steel rod as necessary.

KSW's steel mill will provide STM with an assured supply of steel rod that meets the requirements for projects using "made in the USA" materials, while increasing KSW's productive rod capacity.

New website reaches Spanish speakers

Gibbs Wire & Steel Inc has launched a new Spanish and English language website to promote Gibbs Metals de Mexico, providing wire and strip products to manufacturers in Mexico, and Central and South America.

The goal of the new Gibbs.mx website is to provide an expanded digital platform showcasing the range of metal products that Gibbs offers to Latin American manufacturers of springs, electronics, automotive, medical, aerospace and consumer products. The site provides detailed content of the grades, tempers and forms of wire and strip products, ready for immediate shipment. The site offers simple contact forms for customers to request material quotations, place orders or access documents, and quick downloads of quality certifications.

Don Hennon, VP of operations for Gibbs Metals de Mexico, commented: "The new website will be an important tool for expanding our digital reach to local Spanish language manufacturers. It also gives us visibility on major search engines for international companies searching for wire and strip suppliers for their Mexico, Central, and South American manufacturing operations."

Gibbs Metals de Mexico is one of seven custom strip and wire service centers offered by Gibbs Wire & Steel. Headquartered in Connecticut, Gibbs has additional locations in Texas, North Carolina, Indiana, California and Ontario.

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New face on the regional board

Peter Comber has joined Houston Wire & Cable as region vice president for the midwest and northeast regions. He will be based at HWC's Downingtown, Pennsylvania, office.

Mr Comber, a graduate of Susquehanna University in Selinsgrove, PA, with a BS in Economics, is an industry veteran in the areas of wire and cable distribution. Peter was most recently director of business development for Distributor Wire & Cable (DWC), and prior to DWC with Omni Cable for 20 years in various sales and senior management positions.



Mike Constable, CEO Huawei Marine
Image: www.globalmarinesystems.com

Cable to Belize

Huawei Technologies USA Inc and Huawei Marine Networks Co Ltd will work with Belize Telemedia Ltd (BTL) to build an undersea cable system between the Belize mainland and San Pedro Island.

The undersea cable, named Strategic Evolution Underwater Link (SEUL), is a key piece to BTL's promise to modernize its mobile and landline network. The project includes deploying LTE (4G) mobile service and fiber to residential and businesses buildings in San Pedro.

"We have made it our mission to put Belize in the top three in the region in terms of connectivity and broadband speeds. Strategic Evolution Underwater Link is another step in achieving our goal, along with the build out of nationwide 4G LTE," said Anwar Barrow, chairman of the BTL executive committee.

The SEUL cable will span 24km, delivering 40 channels at 100G per fiber over 8-fiber pairs, which will result in up to 32Tb per second.

The project is scheduled to start this summer, with a completion date towards the end of 2017.

"We are excited to continue our partnership with BLT, this time to construct a next-generation undersea cable system that will use advanced technology to bring fast, reliable and low-cost connectivity to the people of Belize," said Mike Constable, CEO of Huawei Marine. "...This project demonstrates our strong commitment to providing leading-edge, high speed Internet service to all Belizeans and contributing to the social and economic development of the country."

Ensuring WYS is WYG in cable printing

Gem Gravure has introduced diamondBRIDGE, a data interface system designed to improve security and quality on production lines that utilize ink jet printers for marking and coding products.

Developed for wire and cable manufacturing operations, diamondBRIDGE acts as a data bridge between the line operator, quality control personnel and the ink jet printer. It allows front line operators to change the codes on ink jet printers at the point and time of production, so eliminating the coding errors often made when operators rely on paper orders when setting up ink jet printers.

Gem Gravure developed diamondBRIDGE because its customer base needed to reduce common errors such as loading the wrong text or misspelling important information. With diamondBRIDGE, errors and waste are said to be virtually eliminated because operators have access to the most up-to-date information related to printer messages and other equipment settings. This vital information is displayed clearly on the diamondBRIDGE screen.

In addition to preventing operators from typing in wrong codes and misspelling information, diamondBRIDGE also prevents unauthorized operators from sending files or making unapproved changes.

diamondBRIDGE is designed to control several ink jet printers on a line. It is hard-wired, and can be connected to a WiFi network.



Power plans

The national energy commission of Chile has awarded contracts to Mainstream Renewable Power to build and operate seven utility-scale wind energy plants with a total investment value of \$1.65 billion. The projects, awarded by twenty-year term contracts, are located throughout Chile and are scheduled to begin supplying energy into the grid from January 2021. All seven projects will be fully owned by Mainstream.

Mainstream was among the leading beneficiaries in what has been described as the biggest, and most competitive, electricity tender in the country's history. Eighty-four companies submitted 85,000GWh of bids for the 12,000GWh of available power – nearly seven times more power than could be awarded. This is the first time Mainstream has participated independently in a Chilean bid.

Since entering the Chilean market in 2009, Mainstream has developed a comprehensive portfolio of wind and solar energy projects in the country, extending to over 2,000MW across more than 40 projects from Arica, in the north, to Puerto

Montt in the south. Through its joint venture with Actis (Aela Energia), Mainstream has an additional 300MW of wind projects, won in the 2015 auction, due to begin construction this year, and a 33MW wind farm which has been in operation since 2014.

Canadian Solar Inc has signed a power purchase agreement (PPA) with the federal electricity commission (CFE) for a 63MW solar power plant in Aguascalientes, Mexico. The project was awarded in April 2016 under Mexico's first long-term electricity auction, and is expected to be generating electricity by September 2018. All the electricity generated will be sold to the CFE under the PPA for a 15-year period.

Dr Shawn Qu, chairman and CEO of Canadian Solar, commented: "We will continue to leverage our global project development and execution capability [and] to expand our global late-stage solar project pipeline to meet the growing demand of clean solar energy in Mexico and around the world."

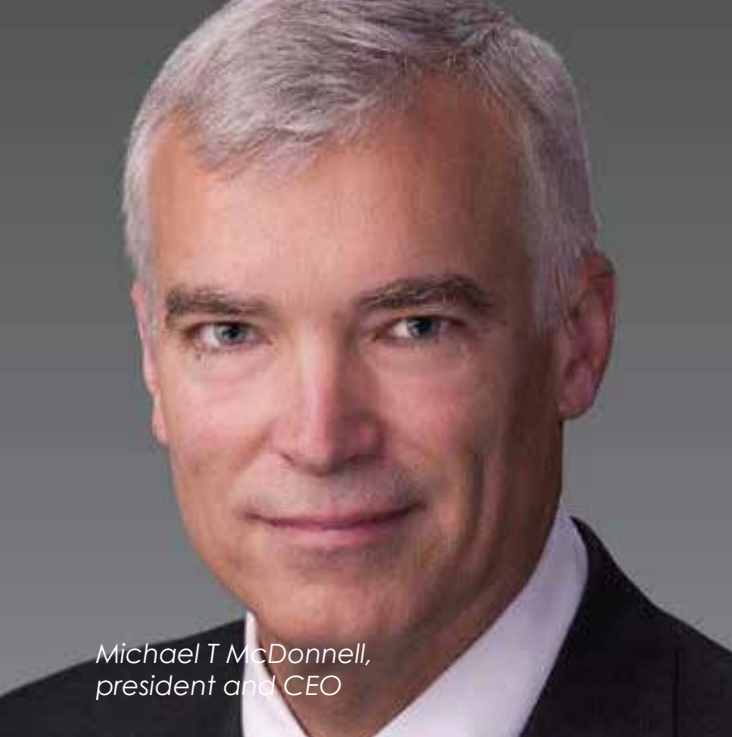
Cable funding

Northern Cables, a Brockville-based company that manufactures copper, aluminum and low voltage cables for industrial, mining and commercial use, has received \$820,000 from the ministry of economic development and growth to expand its Brockville facilities by 30,000ft² and to allow for investment in new equipment to manufacture aluminum products at its Prescott facility.

Shelley Bacon, the company's CEO and founder, reported: "We already started our site plan work a couple of weeks ago, so we anticipate being able to start the foundation for the addition in the next few days. We're just waiting on a building permit."

The project has a total value of \$8.2 million and is expected to be completed in 2020. The development will include an outdoor storage dome, to keep millions of yards of cable safe from the elements.

"This project will help Northern Cables increase productivity, stay competitive and create good paying jobs in the province."



Michael T McDonnell,
president and CEO

Changes at the top

General Cable has appointed Juan Mogollon as senior vice president of Latin America. Mr Mogollon will be responsible for the company's development within the Latin America region.

Mogollon was previously president of growth markets at Tyco International. Prior to joining Tyco, he held global leadership positions at United Technology Corporation and General Electric. Mr Mogollon holds a master's degree in mechanical engineering from the University of California at Berkeley and a bachelor's degree in nuclear engineering from the University of Arizona.

"We are pleased to welcome Juan as part of General Cable's strategic leadership team," said Michael T McDonnell, president and CEO. "His breadth and depth of experience spans multiple industrial segments across mature and emerging markets. I fully expect that

we will benefit tremendously from his proven leadership experience in driving performance improvement, growth and operational efficiencies."

General Cable has also announced that Gregory J Lampert, executive vice president, president and CEO of the Americas, will leave the company to pursue other opportunities, pending a suitable transition period. The company will conduct an external search for an operating executive to lead the North American business. In the interim, Mr McDonnell will assume direct responsibility for North America business.

"Greg has been a valued contributor to the General Cable team," said Mr McDonnell. "I would like to thank him for his years of service, and dedication to the businesses he has served."

EUROPE NEWS

LONGER LIFE UNDER GLASS

Researchers from St Petersburg's ITMO University in Russia have developed optical luminescent glass with the ability to improve the efficiency and lifetime of solar cells.

The optical material, developed at the university's international laboratory of modern photonic materials and technologies, absorbs ultraviolet radiation and converts it into visible light. The trapped ultraviolet radiation will help to charge the panel, while the glass protects the solar panel from ultraviolet light and dust, both of which reduce the performance of silicon solar cells.

Laboratory associate, and lead author of the research work, Yevgeniy Sgibnev said: "We have managed to increase the efficiency of ultraviolet conversion in the glass up to 30 percent, which is comparable with the front-end research in this field.

"Even more, we are already optimizing the technology and planning to raise the quantum yield twice. The glass with such properties can find solid application."

The university scientists said that the manufacture of white LEDs using the new luminescent glass will be a significant step forward in the production processes of light equipment.

Research institute for nanophotonics and optoinformatics director Nikolay Nikonov added: "Now the LEDs require replacement every six months but, produced by our technology, they will live ten times longer: this will significantly cut the costs of lighting replacement."

The researchers believe that the new glass will also withstand high temperatures and adverse weather conditions.



Scottish power project

J Murphy & Sons has been appointed to carry out the onshore work for the European Offshore Wind Deployment Centre (EOWDC), also known as the Aberdeen Offshore Wind Farm (AOWF).

The contract includes the pre-construction design, onshore cabling, substation construction, and connecting the wind farm to the national grid before it begins operations in 2018.

Pre-construction was underway in August 2016; work on site will begin in October, and the final electrical system testing will bring the project to completion in March 2018.

Murphy previously partnered with Vattenfall on the Kentish Flats Offshore Wind Farm, installing new cables to transport electricity from the wind farm to the local substation.

The EOWDC is Scotland's largest offshore wind test and demonstration facility. It will be powered by 11 turbines with an installed capacity of up to 92.4MW, with a 132kV transformer completing the connection.

Cable technology event

UK cable producer JDR recently held a technology event for key customers to introduce its latest 72.5kV cable. Attendees learnt about the cable's qualification program as well as cable development, high-voltage and full-scale wet-age testing, cable splicing, joints, connectors and thermal analysis.

JDR invited a few key supply chain partners to the event, including Tekmar, who provided an overview of the cable protection systems, and ORE Catapult, who provided electrical testing services throughout the development, product qualification and type test program. The introduction and presentations were held at Hartlepool College of Further Education, with whom JDR is building strong links to the local community and partnering to develop future skills.



Project go-ahead

The UK's Secretary of State for Energy has granted development consent for the 1.8GW Hornsea Project Two offshore wind farm, 89km off the Yorkshire coast.

Hornsea Project Two is being developed by Smart Wind, owned by DONG Energy. The development consent order (DCO) was approved by Greg Clark MP at the recommendation of the planning inspectorate, and covers the entire project including the turbines, foundations, offshore and onshore substations, array cables and export cables.

Huib den Rooijen, director of energy, minerals and infrastructure at The Crown Estate, said: "Offshore wind is already on course to meet ten percent of the UK's electricity demand by 2020. Major developments of Hornsea Project Two's scale will pave the way for its continued growth, alongside driving down costs, creating high value jobs and supporting the UK's transition to a low carbon energy supply."

Getting Connected

Aqua Comms, owner of the the \$300m transatlantic fiber network AEConnect, has selected Eir's wholesale arm Open Eir to provide data-center-to-data-center connectivity as it comes ashore.

Aqua Comms announced last year that it was building a \$300-million fiber network between Ireland and the US, capable of handling all data traffic for Europe and the US. The final section was connected in the mid-Atlantic last December, and the network was scheduled to go live in January of this year.

The partnership with Open Eir enables Aqua Comms to connect its \$300 million, 5,536km transatlantic subsea cable system to Dublin data centers from its Killala cable landing station through a 350km terrestrial fiber connection.

From Dublin, the system links to the existing Aqua Comms Irish Sea fiber network, CeltixConnect, and on to Wales and major data centers in London. In the USA, the landing station connects to other major data centers throughout New York City and New Jersey.



Single-minded approach to single core cables

The cable industry has welcomed the introduction of British standard BS 8592:2016 Electric cables; thermosetting insulated, non-armoured, fire-resistant, single core, non-sheathed cable of rated voltage 450/750V. The new single core cable standard ensures these small sized cables, commonly used for final circuit wiring of critical systems such as fire alarms and emergency lighting, now have a specification.

The cables have been manufactured, distributed and widely used for many years, and are commonly used across the Middle East and Asia in critical emergency circuits, but without a full specification. The new standard clearly defines the design and performance specification, giving specifiers, designers and installers greater certainty that the cable is fit for purpose.

Major requirements of the new standard include “low emission of smoke and corrosive gases when affected by fire,” and the cables are subjected to an IEC 60331-3 dry fire resistance test.



Cyber-crime

Leoni, the German wire manufacturer, believes it has been the victim of cybercriminals and an extensive fraud scheme. The company has reported the loss of millions of dollars through falsified documents and identities, and the use of electronic communication channels.

The fraudulent activity was discovered on 12th August, and company funds were immediately transferred to accounts abroad. The management board has launched a full investigation into the events and is currently assessing claims for damages and insurance claims.

The matter has also been reported to police criminal investigators. The damage amounts to an outflow of liquidity of around €40 million, but the activities are said not to have affected the IT infrastructure or data security.



Protecting the global steel trade

The European commission is expected to further strengthen its steel trade defenses as a “global trade war” in the alloy intensifies. The commission has already introduced anti-dumping duties on Chinese imports of products such as reinforced bar, cold-rolled carbon steel and cold-rolled stainless steel, of between 18.4 and 25.3 percent.

However, EU data shows that carbon steel imports in the year to May 2016 rose 21 percent, with China now representing 27 percent of total imports, while stainless steel imports rose 17 percent over the period.

China, which produces half the world's 1.6 billion tonnes of steel, has struggled to reduce its estimated 300 million tonne overcapacity, while rising prices have encouraged its firms to increase production for export, but Beijing denies its firms are dumping or selling steel at below fair value.

Many countries disagree, and the US has imposed duties of up to 450 percent on some Chinese steels.



Results show ups and downs

Manufacturer Bekaert's recent results show strong volume and margin growth in the first half of 2016. The group's 6 percent volume growth stemmed from the consistent demand in automotive and solar markets and steadily increasing sales volumes in industrial steel wire and construction markets.

The robust volume growth was offset by adverse currency movements (-3 percent), lower wire rod prices (-4 percent) which were passed on to customers, and price erosion and mix effects (-3 percent). Also, a slowdown in oil and gas markets reduced demand for profiled wires and steel ropes.

Bekaert's overall stronger business portfolio, and the growing impact of the various global transformation programs, drove a significant profit improvement. REBIT increased by 40 percent at a REBIT margin on sales of 8.6 percent, compared with 5.9 percent in the same period of 2015.

Bekaert achieved excellent results in the EMEA and Latin America, and very strong margin growth in Asia Pacific (more than doubling the margin of the first half of 2015), with improved margins in North America (4.8 percent, up 30 percent).

ASIA & AFRICA NEWS



SA INVESTIGATION COMES TO AN END

ArcelorMittal SA has been fined R1.5 billion (approximately \$100 million) by the competition commission. The fine is believed to be the largest fine for anti-competitive behaviour imposed on a single company in South Africa's history.

The commission said Arcelor had admitted to its involvement in long steel and scrap metals cartels, but denied allegations of collusion in the flat steel and wire rod markets. The commission confirmed that the imposition of the fine brings all proceedings against the company to an end.

ArcelorMittal also agreed to a number of other remedies, including limiting price increases of flat steel products and committing R4.64 billion (approximately \$3.3 billion) to capital expenditure for the next five years, while not admitting its pricing

conduct contravened the Competition Act.

Investigations into South Africa's local steel industry began in 2008, following concerns about high and increasing steel prices despite SA being a net exporter of steel. Other companies, including Cisco (Cape Town Iron and Steel Works), Scaw Metals, Cape Gate and Highveld Steel and Vanadium, were implicated during the investigation.

Competition commissioner Tembinkosi Bonakele said the penalty sends a strong message of deterrence, and is an important milestone in the watchdog's enforcement against cartels, adding: "In addition, the pricing remedy reflects our desire to protect SA consumers against dominant firms, particularly on key industrial products."



Easier cleaving

Sumitomo Electric Industries Ltd has released a new optical fiber cleaver, the FC-8R series. The FC-8R series features an auto-rotating blade, and a digital cleave counter that displays the number of cleaves performed. A clear numerical display assists in determining the right time to change the blade.

While its predecessor, the FC-7R series, was capable of performing cleaves for up to 8 fiber ribbons, the new FC-8R series can handle up to 12 fiber ribbons, is 25 percent lighter and is designed to be easier to use.

Wire rod prices

Chinese chrome-based wire rod export prices increased by \$10 per ton to \$355-\$365 per ton FOB in the first half of August. The price increment is said to be due to the upward trend in billet prices as well as an increase in local demand for long products.

Meanwhile, the demand for wire rod in the Middle East is slow. Chinese wire rod import offers are in the range of \$375-\$385 per ton, but Middle East companies are not buying at this price level as local producers are offering competitive prices.

UAE producers are offering wire rod in the range of \$420-\$440 per ton delivered, while Saudi producer Hadeed has decreased wire rod prices by \$107 to \$480 per ton delivered.

Turkish exporters are offering wire rod at about \$400-\$410 per ton FOB.

While the general feeling is of falling prices, many buyers are maintaining a low inventory to avoid losses.



High speed, low loss

China Unicom has launched a large effective-area fiber land optical cable project in the provinces of Xinjiang and Shandong, China, in which Hengtong's ultra-low-loss fiber (ITU-T standard code G.654E) has been utilized.

The project involves two land mainlines: Hami to Balikun, and Jinan to Qingdao. In initial tests the ultra-low-loss G.654E fiber was said to perform well in temperature resistance, attenuation, weldability and strength properties, according to Wang Guangquan, director of the network technology research department of China Unicom.

Based on land and marine optical communication and mainline requirements, Hengtong's ultra-low-loss fiber is a next-generation communication fiber for high speed, large capacity and long distance.

Hengtong's ultra-low-loss fiber project has received special funds from the Chinese government, in support of China's information, e-commerce and Internet industries.

Port's wind farm plans

The government of Kitakyushu city in Japan is to auction 2,687 hectares of water. The water area, controlled by the city's port, will be available for lease to companies interested in constructing and operating a nearshore wind farm at the site. Most offshore wind power projects in Japan are planned in port areas as they provide good infrastructure for construction and operation of wind farms.

Project guideline papers are being distributed, and registration of interest is open until 9th September. The capacity of the potential wind farm is yet to be disclosed. Bids will be accepted between 3rd and 18th October, and the winner of the lease will be announced in the second half of January 2017.

This is the first offshore wind power auction based on a recently amended port and harbour law in Japan. The amendments allow developers to lease designated water zones in port areas for a period of up to 20 years. The changed law also establishes the bidding system for offshore wind-related development in port areas.

The offshore wind projects are not expected to be negatively affected by the 20-year lease limit, as developers have the option to re-apply for the lease.



“Aloha” to new landing partner

Hawaiki Submarine Cable LP has selected DRFortress as its landing and operating partner in Hawaii. As part of its system architecture, Hawaiki will land the proposed 14,000km trans-Pacific cable in Oahu, Hawaii.

“Hawaii represents a key market for Hawaiki and the demand for subsea capacity to the mainland US continues to grow at an impressive rate,” said Gina Bohreer, senior vice president North America of Hawaiki.

“In 2015 we made the decision to invest substantially in Oahu and purchased land in Kapolei to build our cable landing station, which will be the first open-access station in Hawaii. The next step was to select the right partner, sharing the same carrier-neutral philosophy, to help us build and operate the station. We look forward to partnering with DRFortress, who understands our customers’ requirements in terms of neutrality and choice for local connectivity and diversity.”

Route survey gets underway

Hawaiki Submarine Cable LP and TE SubCom have launched a marine route survey in preparation for the deployment of Hawaiki, the 14,000km trans-Pacific cable system scheduled for completion in mid-2018.

Hawaiki is expected to be the highest cross-sectional capacity link between the US, Australia and New Zealand as well as Hawaii, with options to expand to several South Pacific islands.

The system was co-developed by New Zealand-based entrepreneurs Sir Eion Edgar, Malcolm Dick and Remi Galasso. “Each stage of this groundbreaking project is important, but after very carefully planning our transpacific route, and conducting an extensive survey of each landing site, we are extremely pleased to launch the marine route survey, which will give us data necessary to safely and properly deploy the system in the coming months,” said Remi Galasso, chief executive officer of Hawaiki.



Malaysia cable makes progress

The government of Malaysia has announced that the fiber optic submarine cable linking West Malaysia with the states of Sabah and Sarawak is scheduled for completion in June 2017.

The Rakyat Post reported the deputy minister of communications and multimedia, Datuk Jailani Johari, as saying that the 3,800km fiber optic cable system will involve an investment of \$155 million, with funding provided by the Malaysian communications and multimedia commission (MCMC) and Telekom Malaysia, via a public-private partnership agreement.

The new Sistem Kabel Rakyat 1Malaysia (SKR1M) network, designed to have an initial capacity of 4Tb per second, will land in Mersing (Johor), Kuching, Bintulu and Miri (all Sarawak), Kota Kinabalu (Sabah) and Cherating (Pahang).

SKR1M will comprise five segments: S1 connecting Mersing and Kuching; S2 Kuching to Bintulu; S3 Bintulu to Miri; S4 Miri-Kota Kinabalu; and S5 Kota Kinabalu-Cherating. On completion, and depending on demand, the SKR1M system capacity could be upgraded up to 12Tb, Mr Johari said.



Dr Jeremy Hodge at the event in Kuwait. Photograph courtesy of BASEC

Spreading the word on safety

International cable test and certification body, the British Approvals Service for Cables (BASEC) has accompanied Ducab in a technical seminar on fire performance cables, advising Kuwaiti engineers and contracting consultants on a British standard for life safety and fire-fighting systems, BS 8519.

The seminar, held at the Raddison Blu hotel in Kuwait City, was attended by senior MEP professionals representing the Kuwait ministry of electricity and water and reputed consultant companies from across the region.

Dr Jeremy Hodge, chief executive at BASEC and guest speaker at the event, said: "We are delighted to work with thought leaders like Ducab, providing independent technical information to educate and inform engineers in Kuwait to ensure they are fully conversant with up-to-date fire cable regulations."



IWCS



THE
**International
Cable • Connectivity
Symposium**

Industry Leadership, Innovation
and Professional Development



October 2-5, 2016
Rhode Island Convention Center

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Exhibitors' Products

Advaris Informationssysteme **Booth 434**

Advaris is a supplier of special software solutions and consultancy for cable and wire manufacturers, with customers ranging from small and medium companies to global players like Nexans, Southwire, General Cable, and many more.

Advaris's functional modules designed for engineering and production management guarantee integration of processes without the need of installing costly interfaces.

From the first customer contact to the processes of cable design, costing, manufacturing, quality control, warehouse management, and full ERP systems including invoicing and shipping, the C2 system supports the entire business process to the release for manufacture of routings, BOMs and test plans.

As the central product data management system, C2 provides the technical master data for production scheduling, materials management, shop floor control, quality assurance and sales.

C2 can be seamlessly linked with Cable MES – the manufacturing execution system for wire and cable makers.

Thus Industry 4.0 – also called the Smart Factory – is no longer Utopia, but is becoming an established way of life in cable industry.

Chengdu Centran **Booth 203**

Centran Industrial is a global supplier of raw materials for the cable and wire industry, and one of the largest manufacturers of water-blocking tape and yarn, PET yarn, marking tape, etc.



▲ Some of the tapes on offer from Chengdu Centran

Total capacity is 5,000m for water-blocking tape and yarn. With strong emphasis on quality and customer satisfaction, the company is ISO 9002 certified and has become a reliable source of quality products in the international market having exported to more than 45 countries worldwide.

Cimteq Ltd **Booth 420**

The world of cable manufacturing is a constantly evolving environment. The speed at which the systems and processes available to manufacturers are changing and developing means that in order to keep ahead of the competition companies



need to be confident in their systems and be sure that the way in which they are operating is providing them with the best efficiencies, quality of product, return on investment and ultimately profitability.

The 21st Century has seen phenomenal developments in terms of software and technological advancement, therefore it is only natural that this in itself will revolutionise the manufacturing industry. The onset of what is essentially the fourth phase of an industrial revolution that began back in the 1700s has seen the manufacturing world become increasingly driven by digital systems and the 'Internet of Things', providing increased capabilities in terms of designing, planning, controlling and monitoring down to extremely tight parameters.

Cimteq, one of the leading software designers within the cable industry, is no stranger to this concept. Its systems fully embrace and promote the idea that through the adoption of sophisticated design and manufacturing software systems manufacturers can produce cable faster, smarter and more profitably whilst adapting quickly to changes in the manufacturing environment.

In the increasingly fast paced world there is more reliance on machines to design, produce and manage logistics, freeing up the human element of the workforce to focus on monitoring output, application of experience and teaching the machines.

Ali Shehab, chief executive of Cimteq, envisages these 'Smart Factories' as the future of wire and cable production and

the products are geared towards this, even going so far as to contain technology that allows the users to teach the machine how to behave and to communicate with other systems and devices.

The launch of CableSuite by Cimteq and its partner, Innovites, earlier this year provides a resource to cable manufacturing companies in terms of helping them to embrace the concept of streamlining their production, designing their product more accurately and controlling the production and manufacturing process closely to reduce waste, improve efficiency and provide improvements in profitability.

CableSuite consists of two of Cimteq's products: CableBuilder and CableMES. CableBuilder comprises a host of components including cable design, quotation, 2D and 3D drawings, PDM, manufacturing waste simulation and quality control.

CableMES is a cable-specific manufacturing execution system based on the Wonderware platform and covers warehouse management, product traceability, performance management and job management.

Clinton Instrument Company Booth 205

The Clinton Instrument Company, specialist in spark test technology for the wire and cable industry and inventor of the high frequency sine wave spark tester, will be exhibiting its newest offering, the model

Exhibitors' Products

HF-15B high frequency sine wave spark tester, the flagship model of the new B-series.

This new design combines the latest in control technology with the robust and reliable 3kHz spark test platform.

There are many new features of the HF-15B, including a split electrode design for easy string up and digital signal processor (DSP) based voltage regulation and fault detection.

The fault detection circuit has been upgraded and test voltage is now monitored directly from the electrode, instead of a transformer winding.



▲ The new HF-15B series from Clinton

The fault circuitry can now differentiate between four types of fault conditions: simple pinholes, a series of closely spaced

pinholes, direct metal contact from the center conductor to the electrode, and gross lengths of bare wire.

The new "RC" controller comes fixed to the unit, but can be detached and mounted remotely up to 60 meters away from the test module/electrode. It has a large alphanumeric display/user interface and can be rotated in its bracket to accommodate different viewing angles. The display makes configuration of the equipment easy; all configuration parameters can be changed directly from the front panel menu structure.

Once configured, the system can be passcode protected. In cases where a local display is not required, or centralised process control is desired, the equipment can be configured and controlled directly from PLCs or computers using Modbus RTU (RS-485 full duplex). Optional communication protocols include Ethernet/IP, Profinet, and Profibus, Modbus TCP and analog communications, making the equipment compatible with previous Clinton equipment with analogue control.

When simple control output is all that is required, there are four sets of relay contacts that provide information without requiring advanced programming. These include "high voltage ON" signals to alert operators of the presence of high voltage, a fault relay which actuates when a fault is detected, a "Voltage Watchdog" which will change state when the test voltage has risen above or dropped below a preset level, and a "Bare Wire Alarm" which will



signal when long lengths of bare wire are detected.

Clinton will also exhibit and demonstrate the STCAL automatic spark tester calibration system. The STCAL system will calibrate high frequency AC, mains frequency AC, and DC spark testers to all major specifications. Calibration is automatically performed and documented on all of Clinton's new B-Series spark testers and selected A-Series models. Manual or assisted calibration can be performed on older Clinton units as well as equipment manufactured by others.

When paired with Clinton's model SM sensitivity tester, a complete calibration solution to IEC and NEMA standards is provided.

Maillefer **Booth 207**

Maillefer staff will be on hand to discuss high performance and cost-effective manufacturing solutions for fiber optic cables. "IWCS is an important venue for the cable and connectivity industry and we are proud to join the suppliers' exhibition," said Dr Mikko Lahti, R&D director.

At the conference Dr Lahti will present his paper entitled 'Exploring the Limits of Buffering Process for Both Standard and Micro Tubes'. He will be available during the whole conference and suppliers' exhibition to discuss the results of his work and the manufacturing solutions currently available.

The company's high performance solutions offer a wide variety of innovations. For example, the compression technology with tension feedback serves to keep precise control of excess fiber length (EFL) on the fiber optic secondary coating line OEL 40. And with OEL 40///Explore Maillefer has reached the ultra-high production speed of 1,000m/min.

The company provides manufacturing solutions for every stage of the fiber optic cable process. The portfolio includes tight buffering, secondary coating, SZ stranding and jacketing lines available for production ranging from long haul cables to FTtx with low fiber counts and short lengths.

Medek & Schörner **Booth 305**

Medek & Schörner produces a range of cable marking machines:

Cable marking machines:

- High quality gravure printers (LAN cables, control cables, etc) for speeds up to 1,200m/min
- Water misting unit for the application of fine water dust for pre-cooling of the hot wire immediately after the extruder
- Embossing meter markers/hot foil sequential meter markers for high accuracy of length measurement (power cables, telecommunication cables, optical fibre cables, etc)
- High performance ring markers for marking telephone wires, switchboard

Exhibitors' Products

- wires, automotive cables and LAN cables
- Video system for monitoring the print quality of fast-running cable printing machines, eg allowing real-time inspection for bad quality and/or missing prints
- Laser marking system for cables

Optical fibre coating systems:

- Top speed optical fiber processing systems
- Optical fiber color coding up to 3,000m/min



▲ Optical fiber coloring from Medek & Schörner

- Ring marking of optical fibers at speeds up to 1,150m/min
- Tight buffering up to 1,300m/min
- Fiber ribbon production with excellent ribbon planarity and for speeds up to 1,000m/min
- CFU production of compact fiber units
- Copper wire insulation with UV varnishes (enameled wire)

- Manufacture of dimension-sensitive precision micro flexible flat cables (FFC) using UV resins

NDC Technologies (Beta LaserMike) Booth 118

NDC Technologies will be demonstrating the latest Beta LaserMike system solution for in-process measurement and automated quality testing of cable.

The Beta LaserMike measurement system solution is designed to improve product quality, increase productivity, optimise process reliability, and reduce manufacturing costs.

NDC will be exhibiting its range of AccuScan diameter and ovality gauges including the economical AccuScan 4012 single-axis gauge and the AccuScan 5000 Series two-axis gauges.

The AccuScan 4012 offers manufacturers a compact, economical gauge for measuring product diameters up to 12mm with ± 0.0005 mm accuracy.

The AccuScan 4012 provides highly flexible communications with easy connection to a host PC or PLC using RS-232, DeviceNet, Profinet, Profibus, Ethernet/IP, and Ethernet TCP/IP. The AccuScan 5000 Series offers high-speed, highly reliable two-axis diameter and ovality measurements for products up to 80mm. The AccuScan 5000 Series effectively monitors cylindrical round



and special-shaped products for optimum process control and immediately catches product flaws with high-speed tolerance checking.

The Beta LaserMike products team will also present its new AccuScan 6000 Series – a four-axis scanning diameter and ovality gauge that provides the highest ovality and flaw detection accuracy compared to three-axis gauges.

The latest DCM ES-2G LAN/data cable testing system enables cable makers to test more cable faster and with higher quality results. The DCM ES-2G efficiently tests Cat 5/6/6a/7/7a/8 cables to 2.2GHz. A new innovative technology eliminates the effect of jacket removal on reflection measurements, such as input impedance and return loss. An automated four-pair switching platform enables operators to perform cable testing in less than three minutes.

Easy-to-use testing software offers complete test management and reporting capabilities.

In addition, the other latest Beta LaserMike products on display include:

- LN3015/LN3040 Series three-axis lump and neckdown detectors for the quick, reliable detection and location of product flaws before they become costly production problems to ensure maximum quality control.

Rosendahl & Nextrom **Booth 225**

Over recent months, Rosendahl and Nextrom has been focusing strongly on how to create even more customer value with its advanced manufacturing technology.

Industry 4.0 – “Smart Factory”– is becoming a reality and opening new doors both for suppliers and manufacturers. It is an industrial revolution which facilitates information management.

The main benefit is concerned with predictive maintenance, backtracking of processes and online monitoring.



▲ *Smart operation with RIO line control*

Rosendahl & Nextrom takes this revolution seriously and is proud to present the opportunities provided by its technology, not only for an individual investment, but for the entire product life cycle.

Outstanding technological developments

Exhibitors' Products

which will be presented at the exhibition are:

- processing high-temp materials and silicone rubbers
- producing loose tubes with fiber overlength control at extremely high speeds
- recycling helium during fiber draw
- VAD/OVD preform technology
- and much more

Sikora **Booth 424**

Sikora is presenting a full program of proven and innovative non-contact measuring and control devices for quality assurance and cost reduction in the wire and cable industry.



▲ The X-Ray 6000 Pro measures diameter, ovality, wall thickness and concentricity of cables

The company will showcase the Wire-Temp 6000, a non-contact conductor temperature measurement system that is

now also available for diameters up to 2" (50mm) and suitable for installation in CV lines.

Another highlight will be the X-Ray 6000 Pro for online measurement of wall thickness, concentricity and diameter of up to three layers of different material for increased process stability, quality and cost saving at the production of cables.

In addition, Sikora will present its broad product range of devices for classic and high-end diameter measurement with the Laser Series 2000/ 6000. Visitors will also get to know the equally precise as reliable Lump 2000 devices with double sensor technology for lump detection on the product surface.

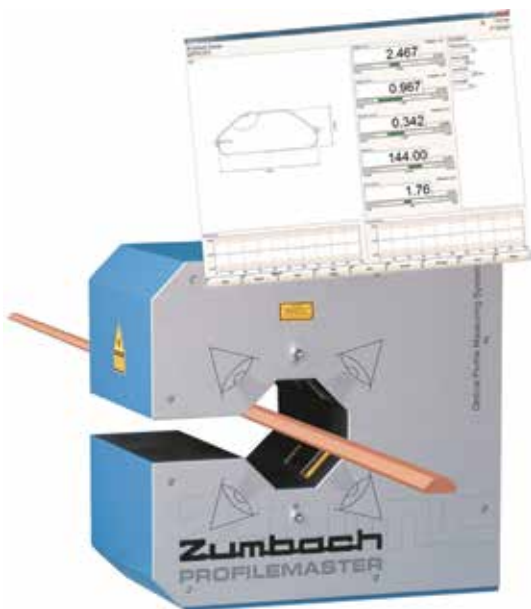
Wire & Plastic Machinery Corp **Booth 319**

With over 30,000 items of machinery in stock and eight warehouses, Wire & Plastic Machinery Corp supplies used wire and cable equipment throughout the world. The company is actively engaged in purchasing high-quality used equipment for stock to offer its customers a one-stop selection. The equipment is sold either in its original state or after mechanical and electrical refurbishing to today's standards.

A wide range of equipment is available for producing almost all cable types such as fiber optic, low-voltage cables, data cable, automotive and specialized electrical cables.

Zumbach Electronic AG Booth 131

Zumbach will be able to give detailed information on its wide range of measuring and control solutions for process monitoring, quality control and cost-effective production.



▲ The new Profilemaster PMM 10 profile measuring unit for shaped wire and similar

Sensors

- New DC and high frequency AC spark tester generation with local BAE 2 SP control and display unit that accurately maintains test voltage under any conditions, including highest capacitive loads
- New, advanced KW Trio fault detectors with local BAE 2 KW control and display unit
- New 1, 2 and 3 axis diameter gauges for any cable and wire and any budget.

Besides the complete line of Odac laser diameter gauges, new models with special beam geometry, fault detection function and high scan rate will be exhibited

- MSD gauges diameter and ovality with multi-source device technology
- The advanced Odex concentricity and diameter gauge for wire extrusion. Fully non-contact, based on magnetic and laser technology
- New ultrasonic wall thickness and eccentricity scanners of the Umac series with quick and easy adaptation to cable diameters and space-saving integration
- Profilemaster profile and shape measurement systems using light section principle and machine vision

Data acquisition, processing and display units (processors)

- Modular high-performance USYS IPCe data acquisition, processing and display units

Complete measuring and control systems

- Dynamic Rayex D and static Rayex S series: X-ray measuring and control system for CV lines, for wall thickness (three layers), eccentricity and diameter/ovality for CV lines
- Wallmaster/Umac – Dialcal systems: Ultrasonic wall thickness and eccentricity systems for cable jackets and Dialcal option for fully automatic calibration and control

**PRODUCTS &
MACHINES
TECHNOLOGY**

International range

Interpower is now manufacturing its own international cable in white, gray and orange, expanding the existing line of Interpower manufactured cable.

Interpower international cable is available in size 3 x 0.75mm² in gray and orange; in size 3 x 1mm² in white, gray, orange; and in size 3 x 1.5mm² in white and gray.



▲ *The expanded line of Interpower manufactured cable*

The wiring code is brown, blue and green-yellow with a fixed operating temperature of -40°C to +70°C. Each cable size carries several safety agency approvals.

Interpower offers a one-week US manufacturing lead-time on non-stock Interpower products, and same-day

shipping on in-stock Interpower products with no minimum order requirements. Technical support is free, and value-added and custom services are always available.

High performance plenum cable

Hitachi Cable America Inc (HCA) has released a multi-purpose, high performance StratoGig-HD[®] category 7 cable. Made at its Manchester, New Hampshire, facility, the StratoGig-HD is designed to accommodate 10Gb Ethernet and support up to 120 watts of power, for power over Ethernet applications, and to support all HDBaseT applications up a full 100m.

With a plenum listing from UL, the StratoGig-HD can be installed in almost any indoor environment. Additional features of this versatile cable include four pairs of 22 gauge copper conductors (each surrounded by its own foil barrier), an overall braid, third party performance certified by the HDBaseT Alliance and compliance to ISO standard 11801 for class F cables.

The construction and materials used in making the StratoGig-HD are said to enable exceptional immunity to external electrical noise such as RFI, EMI and alien crosstalk.

Specialist label printer

Brady has released its new BMP[®]61 label printer, designed for effective and efficient identification of wires, cables and components.

“The new BMP61 printer was created to be a trusted and dependable identification companion for users, standing up to tough industrial identification applications in the field or in the shop,” explained Chris Gauthier, global market manager for Brady.

Brady’s BMP61 label printer features a large, touch-screen color display to show exactly how the finished label will appear. Data connectivity is via USB 2.0 ports, with flash drive support and optional WiFi to allow users to save and send label designs from a computer or mobile device, while the printer’s 300 dpi print head provides a clear, crisp font.

The BMP61 printer offers application versatility with die-cut, continuous and custom labels up to 2" wide. It can be used for self-laminating labels, cable tags and flags, wrap-around wire labels, heat-shrink wire markers, patch panel labels, asset tracking labels, equipment labels, terminal block labels and safety labels.

Lightweight flexibility for cable bundles

TE Connectivity Ltd has released its new Instalite cable bundle management system (CBMS). Part of the Raychem product family, the CBMS provides a lightweight and flexible means of wire bundling and organization.

The flexible sleeve accommodates a wide range of cable sizes, while still allowing for breakouts and transitions.

Used in commercial air, industrial, rail and

defense industries, TE’s Raychem CBMS is designed to reduce the labor costs of taping or lacing, as the flexible sleeve bundles cables and removes the need for taping of wires under overbraids. The sleeve was designed to save space, weight and power, and integrates with TE’s other Instalite products – such as molded parts and lightweight braid to create a complete lightweight system.



▲ Instalite cable bundle management system. Photograph courtesy of TE Connectivity

“The unique weave construction gives our Raychem CBMS much greater expansion and flexibility than traditional cable protection braids,” said Andy Poole, product manager, global aerospace, defense and marine, TE Connectivity. “It addresses the need for increased performance and reliability of systems while also reducing weight and installation times.”

TE’s Raychem CBMS is made from flame-retardant materials to perform in high temperatures, and is resistant to common fuels, oils and greases. The sleeving also provides abrasion-resistant protection to help prevent wire chafing for longer lasting cable management.

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