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USA

**America's online magazine
for wire and cable**

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EDITOR



With emphasis firmly on new technology, it was good to be a part of the recent Interwire exhibition in Atlanta, Georgia.

Many exhibitors took the opportunity to launch new products and reveal updated models to the American market, while capturing the interest of the many visitors to the show at the World Congress Center.

Interwire is renowned as THE place to go to for the wire and cable industry wishing to launch itself on a wider market, and this year's exhibition was certainly no different. Catch up with the latest news from the floor with our coverage, which starts on page 42.

Also in this issue is news that the first of North America's two longest submarine electricity cables has arrived in Atlantic Canada, in readiness for laying the Cabot Strait between Nova Scotia and the island of Newfoundland. Each cable – 170km and weighing 5,500 tonnes – is to be laid from the vessel *Skagerrak* and work is expected to be completed by the later summer. Full details on page 9.

David Bell
Editor

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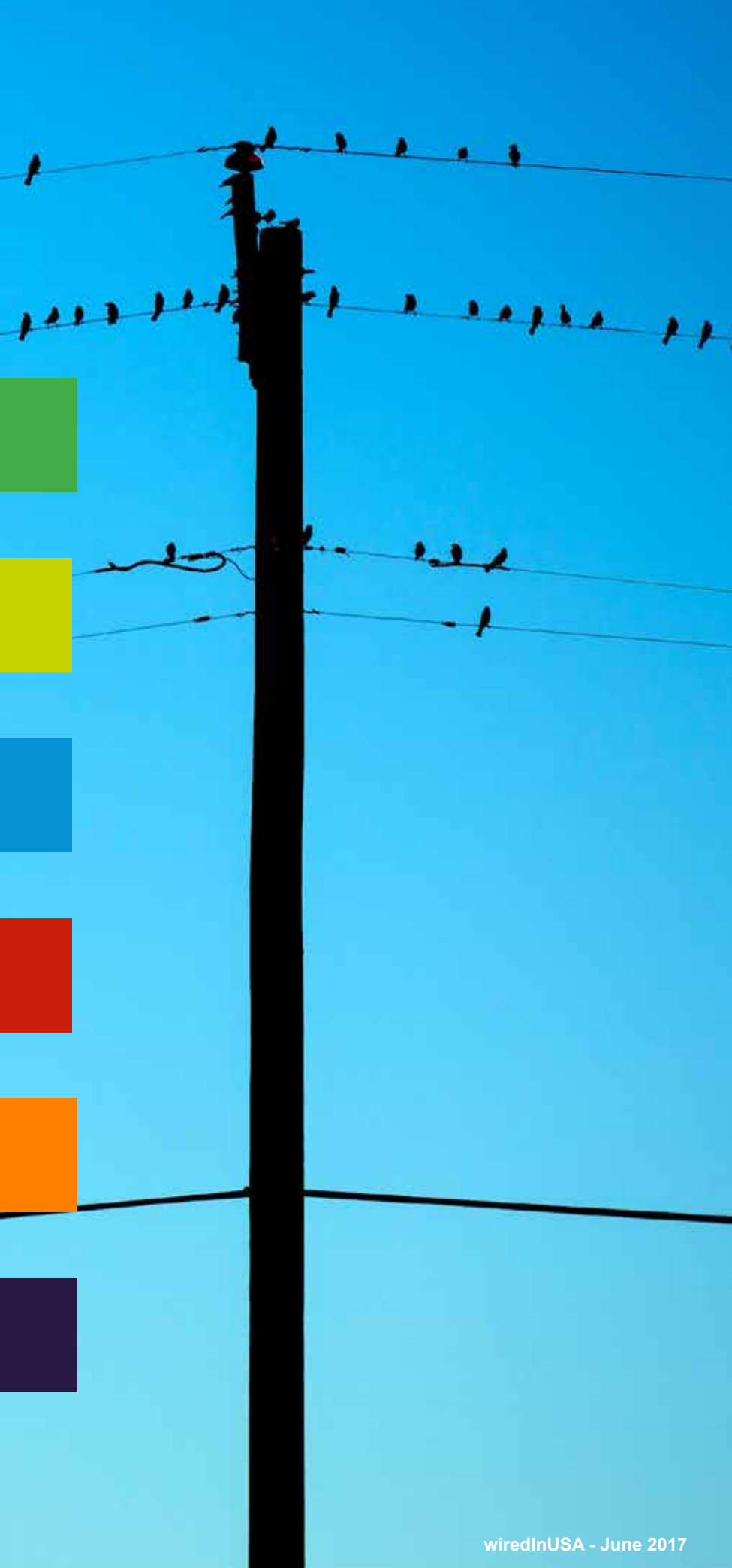
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Russia

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JUNE

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MAKING THE NEWS

Canada's cable duo

The first of North America's two longest submarine electricity cables has arrived in Atlantic Canada, onboard the cable laying vessel the *Skagerrak*, for installation in Emera's Maritime Link project. Each cable measures 170km and weighs 5,500 tonnes. The first cable was manufactured in Halden, Norway, and the second in Futtsu, Japan, to enable the cables to be produced at the same time.

The arrival of Nexans' *Skagerrak* marked the start of the cable installation process, with preparation for the installation of the first electrical connection across the Cabot Strait between Nova Scotia and the island of Newfoundland.

"The arrival of the submarine cables is the result of more than three years of dedication to safety and quality by our team," says Rick Janega, president

and CEO, Emera NL. "Throughout the manufacturing process, the successful testing phase and the transportation of cables, the team's commitment continues to be the driving force of our success to date. This brings us another step closer to the completion of the Maritime Link project later this year."



The cable onboard the Skagerrak

Once the first cable has been successfully laid, the second cable will be loaded onto the *Skagerrak* for installation. The work is expected to be completed by late summer.

Texan power supplied



Image: www.southerncompany.com

Southern Power's 102MW Lamesa solar facility in Dawson County, Texas, has reached commercial operation. Now with three large-scale PV projects operating in the state, Southern Power has one of the largest utility-scale solar portfolios in Texas.

Southern Power's president and CEO, Buzz Miller, described the facility as "An important addition to our growing renewable fleet".

Southern Power acquired the facility from Renewable Energy Systems Americas Inc

in July 2016. Renewable Energy Systems provided full project EPC services, and serves as the operations and maintenance contractor for the plant.

The 358-hectare project comprises around 410,000 PV solar panels and is capable of generating enough power to meet the average energy needs of approximately 15,000 homes. With this latest addition, Southern Power owns more than 1.2GW of renewable generation across its wind, solar and biomass projects in Texas.

Preliminary study for Canadian route

WFN Strategies has been selected by Ambra Solutions to carry out an executive desktop study (eDTS) - an abbreviated analysis using readily available data sources - along the route of a prospective submarine cable between Canada's Nunavut region and Manitoba.

"WFN Strategies is honored to be supporting Ambra, and the end-customer, Agnico Eagle Mines Ltd, in what could become the first submarine

cable implementation in Hudson Bay," said managing director Wayne Nielsen.

For the Hudson Bay cable study, the data used to derive the route and the maps will be summarized in the route's metadata and on the chartlets, and a system design and component budgetary estimate will be provided to Ambra and Agnico Eagle Mines to consider the feasibility of the system.

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Network funding

The US Department of Commerce's Economic Development Administration (EDA) has awarded a \$569,204 grant to Somerset County, Pennsylvania, to expand its critical fiber optic infrastructure. According to grantee estimates, the project is expected to create jobs and generate \$25 million in private investment.

"We commend Somerset County for working to spur economic opportunities through infrastructure improvements," said the deputy assistant secretary for regional affairs, Dennis Alvord. "This project will expand fiber optic lines within Somerset

County, providing access to commercial and industrial areas."

The fiber optic expansion will serve key countywide industrial areas including the Somerset Industrial Park, Laurel Highlands Business Park, the borough of Meyersdale, and the North Star Industrial Park.

The infrastructure is expected to generate further economic development and improve connectivity for vital services across the region.

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Mississippi route assessment

Image: By WebTV3, via Wikimedia Commons

An affiliate of Pattern Energy has filed for a siting certificate with the Mississippi Public Service Commission (MPSC) for a preferred route plan for the Southern Cross Transmission Project.

The route will pass through the Mississippi River in Issaquena County and continue eastward through Washington, Sharkey, Humphreys, Holmes, Carroll, Montgomery, Choctaw, Oktibbeha, Clay and Monroe counties, terminating at a converter station in Lowndes County.

The MPSC will assess the project and issue its order based on the results of the review. With a base load capacity of 2,000MW the Southern Cross project is a ± 500 kV

HVDC transmission line to connect excess wind energy in Texas to the grid in the southeast.

Construction is expected to start in 2018 with the line operational in 2021.

Under the project, the high voltage and HVDC converter station will be constructed in northwest Louisiana, with around 400 miles of HVDC transmission lines across Louisiana and Mississippi.

Pattern Energy CEO Mike Garland said: "The Southern Cross project will be one of the nation's first overhead HVDC transmission lines constructed in nearly two decades."

New route for Northern Europe



Equinix Inc, a global interconnection and data center company, is working with Eastern Light for its new international fiber optic cable route in northern Europe. The new cable system is non-amplified and designed to let customers use their own equipment on their own dark fiber. It will stretch from Stockholm, Sweden, to Hanko, Helsinki, and Kotka in Finland.

The cable will terminate in two Equinix international business exchange data centers — HE6 in Helsinki and SK2 in Stockholm — both of which are key

interconnection points for the Nordics and help facilitate the flow of global Internet traffic in and out of the region.

As global enterprises look to capitalize on business opportunities in the Nordics they also require greater capacity to run IT operations, including cloud-based applications. By connecting to Equinix data centers, Eastern Light and its dark fiber customers will utilize Equinix's mature business ecosystems and interconnection platform.

Continuously improving appointment

NAI, a manufacturer of advanced mission-critical fiber optic and copper cable assemblies and harnesses, has appointed Jason E Porter to the position of director of engineering and continuous improvement. Porter will report to the CEO, Jon A Jensen.

Mr Jensen announced: "Jason will be responsible for all product development and application engineering, in addition to the company's global quality management system and business management processes. Jason has deep product, manufacturing, and quality systems experience in the connectivity marketplace, especially for high performing technologies that both NAI and our customers build and support."

Jason Porter has over 20 years of experience in engineering, sales, manufacturing and strategic planning for global operations and worldwide markets. He most recently held the position of director of global technology development with the PKC Group, a manufacturer of individually tailored wiring products.

Sharing experience

New Bedford, USA, and Grimsby in the UK have signed a memorandum of agreement. New Bedford is exploring offshore wind opportunities, and a delegation has visited Grimsby to learn from the port town's experience in the offshore wind sector and apply it to the emerging US industry.

"In New Bedford we are taking the future in our own hands, just as Grimsby has done over the last couple of decades, and that's the way the world is these days," *Grimsby Telegraph* quoted Jon F Mitchell, mayor of the city of New Bedford. He continued: "If there is a place in the UK to be partnered with it is certainly Grimsby. We are pleased to be here."

In September 2016, DONG Energy, Deepwater Wind and OffshoreMW signed a letter of intent with the state of Massachusetts to lease the New Bedford marine commerce terminal as a staging and deployment location for future offshore wind projects. It is expected that as much as 1,600MW of wind energy could be established in Massachusetts.

Deepwater Wind opened its Massachusetts office at the New Bedford Marine Commerce Terminal in February 2017, and in April DONG Energy opened a US headquarters in Boston.

Fiber mission

The USA's Fiber Optic Sensing Association (FOSA) has been formed with a mission to provide greater awareness of the benefits of fiber optic sensing technology. As part of its campaign, FOSA's website will include articles, information and educational content about the technology and its impact.

Fiber optic sensing uses deviations of light in fiber optic cables to remotely measure acoustics, temperature and strain. It can be used for remote detection of pipeline leaks, vehicle traffic, foot traffic, digging, tunnelling, seismic activity, unsafe temperatures or crumbling infrastructure.

Fiber optic sensing is already used to monitor thousands of miles of power lines, pipelines, international borders, critical infrastructure and facilities across the globe, but also has applications in transportation, security, oil and gas, energy, military and medical industries.

According to a market research report by BCC Research, the global fiber optic sensors market could reach \$3.2 billion by 2021, reflecting a five-year compound annual growth rate (CAGR) of 9.9 percent beginning in 2016. The same report projected a five-year CAGR of 14 percent in the medical industry and 10.4 percent in the energy sector.

"Fiber optic sensing has the potential to dramatically improve the lives of many millions of Americans, enhance business operations, and create jobs. However... industry, consumers, and government need to better understand the value and get greater access to information on this advanced technology. This is why we are creating FOSA," said Thomas Cohen, FOSA's executive director.

FOSA is an affiliate of the Fiber Broadband Association.

Broadening deployment



Heather Burnett Gold

Ajit Pai, chair of the Federal Communications Commission, has announced the addition of Heather Burnett Gold to the Broadband Deployment Advisory Council.

Burnett Gold is president and CEO of the Fiber Broadband Association (formerly the Fiber to the Home Council Americas).

The Broadband Deployment Advisory Council will advise on how to incentivize broadband infrastructure deployment.

The group also includes Fiber Broadband Association members Comcast, Google

Fiber, Rocket Fiber, TDS Telecom and Cincinnati Midwest.

“The Fiber Broadband Association has long worked to break down and reduce regulatory barriers to fiber deployment by educating policymakers at all levels of government, as well as communities directly, on how to enable and create incentives for infrastructure deployment,” said Gold, “We and our members look forward to working with the chairman and this group on developing model proposals to propel fiber broadband deployment across the US.”

New team in Canada



Eric Tremblay

Allied Wire and Cable have welcomed Eric Tremblay, a veteran of the wire and cable industry, to its sales force.

Mr Tremblay, a longtime employee of BJB and A E Petsche, will be running AWC's newest office in Montreal.

"I'm excited to join the Allied team, and expand our reach internationally with feet on the ground," commented Tremblay on the move to Allied. "I was very impressed with the Colledgeville facility: its lean practices, organized and efficient warehouse, as well the very welcoming staff. I look forward to working with the

staff from all branches, and increase our sales across all industry sectors."

Tremblay has over 20 years of experience in the military and aerospace wire and cable industry in North America and Europe.

His background includes sales, account and branch management.

Lake crossing cable

Crosslake Fibre is planning to build a submarine optic fiber cable from Toronto, Canada, to Buffalo, New York, passing through Lake Ontario. It will be the first submarine cable system across Lake Ontario to directly connect Toronto and the United States.

Mike Cunningham, CEO of Crosslake Fibre, explained: “The cable system will help fuel the massive and growing demands for wholesale bandwidth and cloud connectivity in the Greater Toronto area and the Buffalo Niagara region.”

The Crosslake cable will have a high fiber count and will be physically diverse from other routes between Toronto and

Buffalo whilst also being shorter in length. The shorter length enables lower latency connectivity between Toronto and Buffalo, as well as other markets in the US.

Crosslake will own and operate the system as an independent operator, offering dark fiber and managed services to enterprise and carrier customers and ultra-low latency services to financial networks.

The targeted completion date for the cable system is September 2018. “Over the last seven months we have made tremendous progress on the key aspects of the project, including permitting, sales and financing,” said Cunningham.



Nebraska upgrade



Great Plains Communications, a privately owned middle-mile and last-mile provider in Nebraska, has begun work on several projects to improve and extend the reach of its fiber network, currently in excess of 8,000 miles.

Revealed plans include expansion in several Nebraska communities including Fremont, Columbus and Seward, as well as upgrades in or near Gordon, Rushville, Tryon, Ringgold and Wynot.

Enhancement and expansion will also be conducted in the areas of Neligh, McCook and Broken Bow where the company will add voice to the list of current business and residential services that already include high speed Internet and cable television. In the Omaha Metro,

the company will continue to extend its current fiber footprint of over 300 miles to capture additional business customers.

These plans follow the company's January completion announcement of 100G capable upgrades to its entire network.

"Our journey of continuous network improvements continues," said Todd Foje, CEO of Great Plains Communications. "This year we will continue to diversify and differentiate our network, while expanding strategically to provide enhanced services to more business and residential customers throughout Nebraska."



Power switch

The Block Island Power Company has shut down its diesel generators and transferred the island's electrical grid to wind power, generated by Deepwater Wind.

The power company described the transfer as "the final step" in the process. Wind power is expected to save Block Island's 2,000 electricity customers about \$30 per bill, according to Block Island power company president Jeffery Wright.

"Our customers will realize an immediate cost savings in their monthly bills," Wright said.

The cost of Deepwater Wind's five turbines, around \$300 million, will be repaid by Rhode Island ratepayers over the next 20 years. About one-sixth of the power generated by the turbines is used by Block Island, with the rest going to the mainland.



EUROPE

NEWS



Wire & Cable Conference 2017

17-19 July 2017

The Westin Grand, Munich, Germany

Make a date for cable

CRU's 11th wire and cable conference will take place in Munich, 17th to 19th July, 2017.

"We are very excited to be bringing our wire and cable conference to Munich, one of the world's largest IT, communication and automotive industry hubs," said Richard Mack, managing consultant at CRU. "CRU held its 7th annual wire and cable conference in Berlin in 2013. This event was very successful, and one factor was the strong representation of German companies among speakers and attendees," he continued.

This year's conference will include special highlight sessions that focus on the future of renewable energy, connected living, automotive electronics and subsea wire and cable usage. These sessions will explore next-generation applications of wire and cable and how it will impact producers, traders and distributors around the world.

The event will have over 30 presentations packed into a two-day program, in addition to a site visit at the Niehoff plant.

There will be a number of papers on copper, aluminum, optical fiber, coatings and other inputs markets, as well as a showcase of the latest technical developments.

Speakers confirmed to present this year include Rich Stinson, CEO of Southwire; Roberto Candela, CEO, Prysmian Electronics; Arnd Kulaczewski, president and CEO, Niehoff; Oliver Schlotter, EVP services and accessories, nkt cables; Hasegawa Takashi, principal analyst, global network system division, Sumitomo Electric Industries; Andrew Shaw, MD, Ducab, Dubai; and Bernhard Schipper, head of technical council cables, Siemens, Germany.

HVDC recognition



The Institute of Electrical and Electronics Engineers (IEEE) has recognized the world's first commercial HVDC transmission link, in Gotland, Sweden, as a breakthrough milestone in electrical engineering.

ABB introduced high voltage direct current (HVDC) over 60 years ago, with the Gotland link being the first in the world. This pioneering landmark will now be a part of the prestigious IEEE Milestones hall of fame, which recognizes significant technical achievements in electrical engineering. Previous IEEE Milestone recognitions include the invention of the light bulb, the CD player, and the birth of the Internet. With over 400,000 members, the IEEE is the world's largest association of technical professionals.

The first commercial HVDC transmission link enabled power to flow through a 96km subsea cable between Västervik, on the Swedish mainland, and Ygne, a town located on the island of Gotland.

When first installed, the link had a capacity of 20MW and operated at 100kV. The link has been progressively upgraded by ABB as the technology has developed, and today has a rated voltage of 150kV with the capacity to transmit 320MW.

Monitoring tender



Cable monitoring systems wanted for subsea and land cables installed in the Dutch North Sea. Photograph courtesy of TenneT

Transmission system operator TenneT TSO is sourcing a provider of cable monitoring systems for subsea and land cables to be installed in the Dutch North Sea and on the west coast of the Netherlands.

The scope of the intended five-year contract includes design, engineering, production, delivery and installation of DTS (distributed temperature sensing) and RTTR (real time thermal rating) cable monitoring systems for a 220kV sea cable.

The scope can include DTS/RTTR systems for a 220kV and/or a 380kV AC land cable, in order to connect the offshore AC platforms with land stations and an existing 380kV grid.

The two-phase tendering process will last until July 2017, with the contract awarded in October.

Wind across continents



Enel has begun construction of its 298MW wind project, located in Garfield, Kay and Noble counties, Oklahoma, at a total investment of around \$435 million.

The project, named Thunder Ranch Wind Farm, will be built by Enel's subsidiary Enel Green Power North America (EGPNA) and owned by EGPNA subsidiary Thunder Ranch Wind Project. Thunder Ranch is designed to generate over 1,100GWh per year, and should be in production by the end of 2017.

Enel claims to be the second largest wind energy operator in Oklahoma, with over 1.5GW of wind energy capacity from its facilities, including the 150MW Rocky Ridge, 150MW Origin, 150MW Osage Wind, 200MW Goodwell and 108MW Drift Sand. The Italian energy firm also broke ground in April at its new \$420 million 300MW Red Dirt Wind Project in Oklahoma, and has commenced commercial operation of the 111MW Gibson Bay Wind Farm in South Africa through its subsidiary, Enel Green Power RSA.

French fiber event



Prysmian's optical fiber facility in Douvrin, France

Europacable's "Optical fiber cables: Europe's future-proof telecommunications infrastructure" event was held at Prysmian's optical fiber facility in Douvrin, France, May. The visit, attended by around 40 representatives of the Broadband Competence Offices (BCOs) from 18 EU member states and representatives of the European Commission DG Connect, was organized through the Europacable digital team under the leadership of its chairman, Philippe Vanhille.

BCOs are currently being established to facilitate broadband rollout across Europe, with the key objective of supporting project implementation by helping to access EU funding schemes and information about the latest available technologies. It is in this context that Europacable took the opportunity to provide an introduction to the technical aspects of telecommunication networks, and to offer an insight into key aspects of optical fiber and cable technology and the implications of the regulatory framework.

Moves to maintain power flow



TenneT, Sonnen, Vandebron and IBM are partnering to develop blockchain for electricity grid management in the Netherlands and Germany.

TenneT intends to deploy IBM Blockchain, which uses Hyperledger Fabric to incorporate flexible capacity from household batteries into the electrical grid. The company will test the concept in two pilot projects, one with Vandebron in the Netherlands, and the second with sonnen eServices in Germany.

In the Netherlands project, TenneT will maintain the balance on the high voltage grid, and will take care of additional electricity in the event of imbalance between supply and demand. A network of residential solar batteries will be provided to reduce the imposition of limitations on wind energy in the event of insufficient transport capacity.

Bars for Benelux



Prodec high machinability round bars from Outokumpu. Photograph courtesy of Outokumpu

MS Nederland, IMS Belgium and Outokumpu have reached an agreement where IMS will act as exclusive distributor of Outokumpu Prodec high machinability round bars in the Benelux region.

IMS will offer Prodec round bars ranging from 6mm to 100mm, and larger on request. The range is available in 304L/4307, 316L/4404, 303/4305 and 17-4PH grades.

According to tests, Prodec can achieve machining speeds up to 300m per minute, resulting in a double tool life, compared to competing materials in the market. Machining at higher speeds helps to avoid built-up edge on inserts, and leads to a better surface quality and tolerances.

Prodec bars are said to be suitable for many types of machining applications, including fasteners, valves, pressure fittings, nuts, bolts and screws, gears, shafts and bearings.

Consolidation continues



In 2016, nkt cables entered into an agreement to divest its automotive cable activities to a subsidiary of the German-based Wilms Group. Regulatory approvals for the transaction have been received and the deal has been closed, with Wilms Group taking ownership as of 30th April 2017. The transaction includes a plant in Vrchlábí, Czech Republic, where automotive, flexible and special cables are manufactured.

Cables to the automotive industry constituted a niche market, rather than a core business, for nkt cables. The divestment comprises the third sale of non-strategic segments since mid-2016.

nkt cables president and CEO Michael Hedegaard Lyng commented: "The divestment of the automotive business allows us to focus on cementing and developing our leading position within our two core businesses. First of all, to supply turnkey solutions to the high voltage onshore and offshore industry and thereby realize the full potential of the acquisition of ABB HV cables and a growing market. Secondly, to deliver low and medium voltage cables to the construction industry and utilities, among others."

Baltic connection



Discussions are underway on an energy project to disconnect the Baltic states from the Russian electricity system, and connect them to Europe. The prime ministers of Lithuania, Latvia, Estonia and Poland have agreed to sign a memorandum of understanding in June.

Lithuania says that the synchronization project is making progress, with an agreement reached with partners about a single LitPol Link line. However, Ave Tampere, media adviser to the Estonian government, has confirmed that Estonia will not revise its stance to demand a second interconnection with Poland as the only way of ensuring security.

Estonia stated, during a meeting of prime ministers, that with only a single line with Poland, safe supplies of electricity to the Baltic states would be undermined considerably, and reserve capacities would require about €200 million in additional investments. Also, that the functioning of the electricity market would be reduced as some of the existing interconnection capacity would have to be reserved for synchronization purposes and thereby be taken out of the market.



ASIA & AFRICA

NEWS



En route to Guam

RTI Connectivity Pte Ltd and NEC Corporation have announced that construction of the Hong Kong to Guam Cable System (HK-G) has officially begun. The 3,900km undersea cable, featuring 100Gb per second optical transmission capabilities, has a design capacity of over 48Tb per second and is expected to be completed in late 2019.

The cable will land in Tseung Kwan O (TKO) Hong Kong, and in Piti, Guam, at the recently completed Teleguam Holdings LLC (GTA) cable landing station. HK-G will contribute to the expansion of communications networks between Asia and the United States while complementing other regional submarine cables, thereby improving network redundancy, increasing the availability of high capacity, and ensuring highly reliable communications.

Russ Matulich, RTI-C's president and CEO, acknowledged the milestone, saying: "Hong Kong is already an important interconnection point for undersea cables, and Guam is emerging as a key telecommunications hub. By extending HK-G to our SEA-US cable investment in Guam, RTI-C is facilitating a new diverse 100G transpacific cable to better serve our customers' traffic requirements between Asia, the United States and Australia."

Mr Toru Kawauchi, general manager of NEC's submarine network division, commented: "HK-G will be the first project to be co-financed by the Japanese government-led Japan ICT Fund, and the second project supporting RTI's investment in SEA-US for the Japanese loan syndicate. We wish to further utilize these funds for many more cables in the future."

Grids getting smarter



Improved smart energy networks are the subject of research being led by Taiwan's Industrial Technology Research Institute (ITRI).

Smart grids are expected to enable high penetration levels of renewables whilst maintaining grid stability and reliability. Among other benefits, smart grid technology has the advantage of automation, and extensive systems performance information that can enable self-diagnosis and repair in the event of a failure.

Emerging smart grid technology is under development in partnership with the state utility Taiwan Power Company (TPC). As technologies mature they are trialled at TPC's research campus before any large-scale installation.

Existing smart grid demonstration projects include microgrid installations on the Taiwanese islands of Dong-Ji and Tai-Ping. Smart grids are especially valuable for reliable power supplies in island and remote locations.

Money for wire rope



Further to the company's January announcement, Severstal has confirmed that its metalware manufacturing subsidiary, JSC Severstal-metiz, has completed the sale of its specialty wire rope division, Redaelli Tecna SpA.

The sale, at a cost of around €50 million, is said to reflect Severstal's "commitment to maximize value for its shareholders" and will allow Severstal-metiz to focus on its Russian assets and to enhance its efficiency.

Solar in Japan



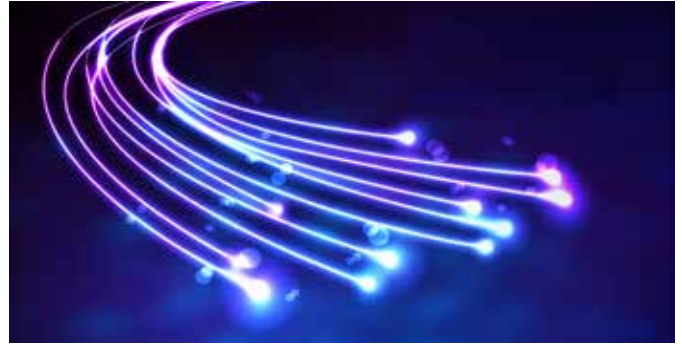
Pacifico Energy has begun work on possibly the largest solar power generation plant in Japan.

The 257.7MW DC Sakuto Mega solar power plant is under construction in the Okayama Prefecture at Mimasaka, and is expected to be operational by September 2019. It will generate around 290 million Kwh of solar energy per year.

Having completed two solar power plants in Kumenan and Mimasaka, the Sakuto plant is the third Okayama project for Tokyo-based Pacifico Energy. The 32MW Kumenan solar project, jointly owned by Pacifico Energy's subsidiary Virginia Solar Group and GE Energy Financial Services, was commissioned in May 2016 and closely followed by the 42MW Mimasaka Musashi solar project.

Pacifico Energy is also developing other projects, including a 96MW solar plant in Miyazaki Prefecture.

Single fiber record?



Japan's NEC is claiming to have become the first vendor to achieve a transmission capacity of over 50Tb per second using a single optical fiber over a distance of more than 10,000km. Significantly faster subsea cables spanning trans-Pacific distances could be the result.

NEC has demonstrated a speed of 50.9Tb per second over an 11,000km span of cable using new C+L band erbium-doped fiber amplifier (EDFA) technology. The company said the performance translated to a "record breaking capacity" of 570PBb per second per kilometer.

To push the capacity of the cable close to the Shannon Limit — the spectral efficiency limit of optical communications — NEC researchers developed a new multilevel, linear and non-linear constellation optimization algorithm. Using the algorithm, NEC has achieved an optimized 32 quadrature amplitude modulation (32QAM) constellation with a higher non-linear capacity limit and — spectral efficiency over a trans-Pacific distance.

Loan support for development



The European Bank for Reconstruction and Development (EBRD) is providing a \$25 million loan to the Egyptian copper rods manufacturer United Metals Company (UMC) to support the company's working capital.

UMC, a subsidiary of Elsewedy Electric, is a leading copper rod producer in Egypt and North Africa. Copper rod manufacturing is an important industry for the Egyptian and regional markets including Algeria, Ethiopia and Lebanon.

The EBRD loan will finance the working capital of UMC, including purchases of copper on the international markets. Some of the loan will implement a comprehensive environmental and social action plan, which includes the purchase of modern equipment. The aim of the plan is to reduce dust emissions from 24 milligrams per cubic meter (mg/Nm³) to 2–5mg/Nm³ by the end of 2018.

African upgrade



ABB is to carry out a partial upgrade of the Inga-Kolwezi HVDC power transmission link for Société Nationale d'Électricité (SNEL), the national electricity company of the Democratic Republic of the Congo (DRC). The link transmits power from the Inga hydropower station on the Congo River to the mining district of Katanga in the south-east of the country. It also exports excess power to the Southern African Power Pool countries.

The 1,700km link was built by ABB in 1982 and was, at the time, the world's longest transmission line. ABB upgraded the link in 2009, installing new thyristor valves, high voltage apparatus and a control and protection system.

ABB's latest refurbishment, at a cost of over \$30 million, will boost transmission capacity, enhance grid reliability, extend life span and ensure the efficient transmission of hydroelectricity across the region. Transmission capacity will increase from 520MW to 1,000MW, securing power supplies to the mining region in Katanga and strengthening the power infrastructure in the DRC.

Subsea surveys



Huawei Marine and Super Sea Cable Networks Pte Ltd (SEAX) have completed the offshore and inshore marine surveys covering the full route of its SEAX-1 submarine cable system between Peninsular Malaysia, Singapore and Indonesia.

Huawei Marine has begun manufacturing the submarine cable, and the SEAX-1 system is on schedule for a completion date in early 2018.

Known as SEA Cable Exchange-1 (SEAX-1), the system comprises a 250km high speed, large capacity, 24-fiber pair fiber optic cable that will connect Mersing (Malaysia), Changi (Singapore), and Batam (Indonesia). Once commissioned, the system will be fully owned and operated by Super Sea Cable Networks Pte Ltd and will serve operators in the region.

SEAX-1 is fully funded and possesses the necessary licenses to operate submarine and terrestrial cable systems within the territories of Singapore, Indonesia and Malaysia. Huawei Marine Networks Co Ltd (Huawei Marine) is a joint venture established between Huawei Technologies Co Ltd and Global Marine Systems Ltd.

Cable contract



The 220kV submarine composite cable for the Binhai North Phase 2 offshore wind farm in Jiangsu province, China

The Chinese cable maker ZTT Group has delivered a 220kV submarine composite cable for the 400MW Binhai North Phase 2 offshore wind farm in Jiangsu province.

ZTT Group's bid to provide 35kV and 220kV cables and accessories for the wind farm was accepted by China Power Complete Equipment Co (CPCEC) in November 2016. All the cables and accessories will be manufactured in ZTT's submarine cable factory in Jiangsu.

The Binhai North Phase 2 is being developed by the State Power Investment Corporation (SPIC). The wind farm comprises one hundred 4MW wind turbines and a 400MW substation that will be installed around 22km offshore. Danish company Ramboll is responsible for the design of the wind farm.

A world map is shown in a light gray color, centered on the Atlantic Ocean. A horizontal orange band is overlaid across the middle of the map, containing the main title text in white. The text is centered and reads "Products, Machines & Technology".

Products, Machines & Technology

Space-saving cables

Cicoil offers kink-resistant, space saving and durable flat cables and assemblies for use in unmanned systems, intelligent robotics and drone applications.

Each cable can incorporate a variety of elements, including power conductors, shielded signal pairs, video and coax conductors, and other design elements such as Cicoil's StripMount fastening strip, all in a single compact cable design.

Cicoil's patented extrusion process allows each component to be placed in a flat parallel profile, precisely controlling the spacing of the components, insulation thickness and overall cable shape. This ensures that conductors do not rub against each other, and provides EMI/RFI suppression.

The rectangular cross-section also allows multiple flat cables to stack, or layer, with almost no wasted space between cables, so providing maximum conductor density for a given volume.

The cable outer jacket is self-healing from small punctures and will not wear, crack or deform during long-term exposure to vibration, sunlight, temperature extremes (-65° to 165°C), acid, submersion in water, sea ice, steam, coarse sand, flames, radiation, mechanical stress, humidity, ozone, UV light, fungus, high altitudes and many chemicals.

Cicoil's UL-recognized, RoHS-compliant and CE conforming cables are manufactured in an automated, climate-controlled environment, and exceed the NASA 1124 outgassing specifications for space use and vacuum requirements. Anti-friction coating options and custom cable designs are available.

Customized monitoring

TE SubCom, a TE Connectivity Ltd company, has announced the availability of eLMS (enhanced line monitoring system), its new customizable solution for providing continuous tracking of fault conditions and cable performance. Significant enhancements to overall line monitoring will allow cable operators to detect changes in cable performance without the need to interpret raw data, supplying straightforward results and consistent transmission.

An all-optical line monitoring system that requires no active undersea components, eLMS will be included in all of SubCom's future Open Cable systems, and will be launched with a fully contracted cable system in late 2017.

SubCom's user-friendly eLMS is said to offer improved performance over traditional solutions, including enhanced resolution for detecting smaller span loss and pump power changes; a graphical user interface for visual representation of wet plant parameters, over time and versus repeater location; and alarm generation based on changes in loss, pump and amplifier parameters.

The line monitoring equipment (LME) signal interpretation within eLMS should free cable operators from manually sifting through high loss loopback data by using enhanced automatic signature analysis (eASA) to detect changes in round-trip span loss and repeater output powers, even from multiple terminal locations.

Mark Enright, vice president, customer solutions, TE SubCom, said: "With eLMS, our Open Cable users can feel confident that their systems are operating at peak capacity and that they can identify and resolve issues when they arise."

Secure industrial connector

Molex's M12-compatible Brad Ultra-Lock system is designed to bring the ease of a push-pull connector to IP67/IP68/IP69K-rated sealed connections in industrial environments.

"Unlike the seal torque integrity of traditional threaded connectors, which are operator dependent, ultra-lock connectors form a secure seal simply by aligning and pushing," said Michael Meckl, global product manager, Molex.

"A superior seal means fewer intermittent signals, less downtime for industrial operations, and increased productivity."

The positive-locking design eliminates intermittent signals, due to harsh conditions or installer error, resulting in a loose connection.

Providing safe, reliable connection of sensors, actuators and other control devices, the operational benefits are said to include an up to 80 percent reduction in electrical commissioning of industrial machinery and automation systems.

Brad Ultra-Lock connectors are designed to remain securely mated under the stresses of machine vibration, cable pulls and in-plant traffic of workers and mobile vehicles.

Suitable for power, signal or communication connections, including Ethernet and USB, and rated for class 2 power and network circuit applications, the connections are rated to 250V AC/DC, and up to 4.0A.

The Brad Ultra-Lock product family includes cordsets, splitters, panel mount receptacles that accept both Ultra-Lock and traditional

M12 threaded cordsets, and pre-wired distribution boxes to simplify the wiring of I/O devices.

Getting tough

L-com Global Connectivity has released a new line of armored M12 cable assemblies for use with industrial Ethernet, test equipment, I/O connectivity, sensors and actuators, and industrial automation.

The assemblies use outdoor CMX-rated, double-shielded FR-TPE cable.



▲ L-com armored M12 cable assemblies

The inner cable jacket is resistant to oil, UV and weld splatter, and is rated for 600V. Additional features include IP68-rated M12 connectors to protect against liquids and particulates.

The inner cable is flex-tested to one million cycles at 10x cable outside diameter and ten million cycles at 20x cable outside diameter. Stainless steel armor with 1,500psi crush resistance protects the cable from damage.

“Our new premium M12 cable assemblies are designed to exceed category standards and ensure uninterrupted network performance, even in harsh industrial or severe weather environments,” said Dustin Guttadauro, product manager.

“An IP68 rating, outer armor and inner shield makes these cables...withstand the most demanding applications.”

The M12 assemblies feature a double-shielded braid and foil design for maximum EMI/RFI protection.

Heavy duty hybrid

The new hybrid CAN bus High Endurance cable from Hradil Spezialkabel GmbH is designed for moving applications in extreme environments, such as heavy duty machinery in open-cast mining or road construction.

This resilient and durable cable comprises three separate cables, but has a cross section of only 23.6mm.

CAN bus High Endurance cable fulfills three separate functions: in addition to real-time control via CAN bus, and monitoring and safety tasks via Gigabit Ethernet, it can also supply motors and applications with voltages of up to 300V through 6 cores of 3x1.5mm² each.

Hradil's cable is designed to withstand the most extreme mechanical stresses, including vibrations, shocks and tensile loads.

All three cable assemblies are protected by their own jackets made from a special easy-glide material.

The Cat 7 Ethernet module at the center of the cable comprises four cores of

2x0.14mm² and 2x0.25mm² each. The CAN bus and the Ethernet cables are wound around this in the next layer.

The CAN bus has nominal impedance of 120 Ohm. Power is supplied through six stress-free stranded bunches, and each core uses highly flexible copper wires, in accordance with IEC 60228 class 6.

The complete cable assembly is protected by a halogen-free TPE-U jacket. Using pressure extrusion, the jacket is amalgamated with the assemblies inside, helping to avoid potentially hazardous interstices. Shielding is by an open braided sheath of a high-strength textile fabric that can withstand high tensile stresses of up to 4,000 Newton.



▲ The new hybrid CAN bus High-Endurance cable

Railway safety label

Silver Fox's yellow Fox-Flo® labels have achieved the necessary levels to pass EN 45545-2 standards for fire, toxicity and smoke emissions. The standards are set to ensure consistent safety standards across Europe's railways.

The system is based on the requirements of the EU directive 2008/57/EC.

EN 45545-2 classifies all on-board material into different groups, which have to fulfill specific requirement sets. These often include several test methods. Fox-Flo tie-on cable labels have passed numerous tests, including accelerated UV and salt mist spray.

Railway housing

The new, compact Heavycon D7 housings from Phoenix Contact are specifically designed to transmit signals and power in railway applications.



▲ Compact D7 size heavy-duty connectors for railway applications. Photograph courtesy of Phoenix Contact

The housings are made from corrosion-resistant die cast zinc with a powder coating, and the units are sealed to IP68 standard. A screw-locking secures against vibration and shock.

The D7 housing surfaces and NBR seals are electrically conductive and, combined with shielded cable glands, provide reliable EMC protection. The housings are tested according to IEC 61373 and EN 50155 standards.

Energy chain cable

igus has developed a new chainflex medium voltage cable, CFcrane.PUR, said to be suitable for travels of up to 1,000m such as those found in crane installations. Cables in the series are highly flexible, flame retardant, and oil and UV resistant, and can be used in special projects or as a retrofit solution.

"In the crane and material handling sectors, installations are getting increasingly larger and working at ever higher dynamics and duty cycles," explained Justin Leonard, chain director, igus. The CFcrane.PUR series of chainflex cables complements igus's existing range of low abrasion and low noise roller energy chains.

Rated for voltages of 6kV or 10kV, the cables can be used indoors or outside due to the conductor structure and material combination.

In addition, the CFcrane.PUR series is up to 20 percent smaller in diameter than conventional motor cables, with a bending radius of 10x diameter.

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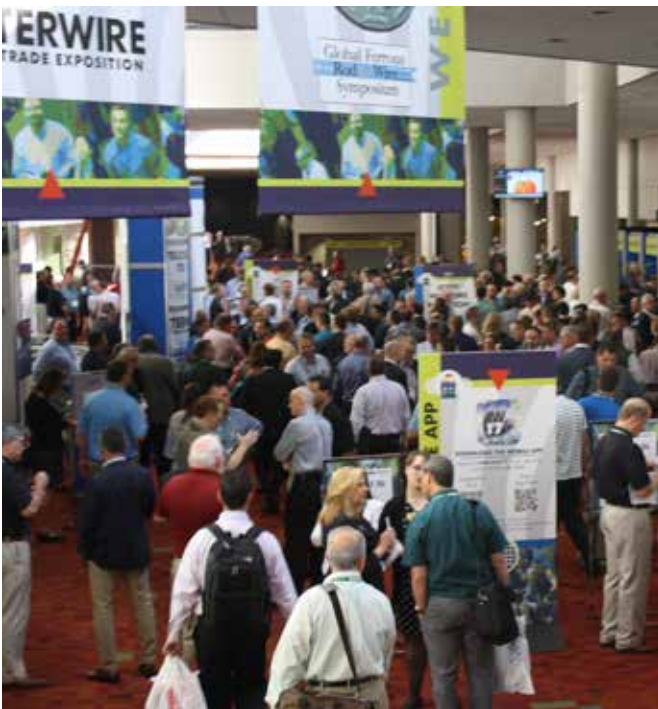




Praise heaped on Interwire 2017

President of organizers the Wire Association International, David Hawker led the plaudits to Interwire, which was staged in Atlanta, Georgia, in May.

“Interwire was a success and it accomplished a number of our objectives. The training and technical programs and the Ferrous Symposium helped educate a cross section of industry professionals,” enthused Mr Hawker.



This year's event comprised three sections: Interwire 2017; WAI's 87th Annual Convention; and its first Global Ferrous Rod & Wire Symposium. More than 3,800 attended.

“We had a sold-out exhibit floor, tremendous involvement of corporate sponsors, and incredible level of volunteer participation, which all point to the health and commitment of WAI's support network,” added Mr Hawker.

“The level and stature of the attendees confirm that Interwire is a core event in our industry. During the show, we recognized four individuals from our manufacturing base for their contributions to the industry. I thank all who contributed to and attended the event and I look forward to Interwire 2019.”

The Interwire exposition comprised more than 400 exhibitors from 25 countries that participated to showcase wire and cable products, machinery, ancillary equipment, and services, with 65 companies being first-time exhibitors.

The footprint of the show consumed 110,000ft² of exhibition space in Hall A of the Georgia World Congress Center.

“This was one of the best Interwires on record,” said Jeff Swinchatt, director of sales and marketing for The MGS Group. “We were excited to see all our friends from the industry and meet some

new ones. This year's event highlighted serious conversations and enthusiasm for our newest system capability. It was a great opportunity to show off our latest accomplishments and catch up with our friends."

Exhibitor Orlando Martinez of Davis-Standard LLC said: "The overall impression of the D-S team is that Interwire 2017 was a solid show and provided us with good leads. We learned about good projects we did not know about, and had a chance to meet with customers we're currently working with in a more relaxed setting. Atlanta is such a great venue for this show."

The show proved a successful one for PWM, a manufacturer of cold welding equipment, which exhibited two of its best-selling machines at the event. "Visitor numbers were good and the booth was busy, with our EP500 rod welder and heavy-duty M101 cold welder in particular generating a lot of interest," said managing director Steve Mepsted.

This first-time "conference within a conference" was a discrete program focusing exclusively on topics of interest to the ferrous industry.

The GFRWS schedule ran concurrently with Interwire offering technical presentations on processing, equipment improvements, testing, quality and measurement techniques. The program also featured a reception at the College Football Hall of Fame.

The WAI issued its top honors to Richard R Miller, a former Southwire Company executive and winner of the Donnellan Memorial Award; and to Harold Moss, Mordica Memorial Award winner.

Keynote speaker Rick Smith, a 3D printing expert and best-selling author, had the full attention of the audience during his talk.

The conference program included more than a dozen technical and practical presentations on non-ferrous and general topics; the fundamentals of wire manufacturing primer course; a panel presentation on Industry 4.0; and a workshop on fines and annealing.

The manufacturing management workshop provided tailored instruction for operations managers and supervisors to pick up where on-the-job training leaves off.

Additional highlights included a two-part tour of Southwire Company LLC in Carrollton, Georgia, where visitors saw its utility products plant and its building wire cable plant; WAI's welcome reception at the Omni Hotel; a member rewards luncheon and raffle; and association leadership meetings.

The Wire Association International – USA
Website: www.wirenet.org

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The collage features three main magazine covers:

- eurowire**: The international magazine for the wire & cable industry. It includes a row of four covers and a world map with callouts for events: STAINLESS STEEL WORLD (Maastricht, The Netherlands), WIRE EXPO (Nashville, TN, USA), INTERWIRE (Atlanta, GA, USA), WIRE DÜSSELDORF METAV CABWIRE (Düsseldorf, Germany), and AMI CABLES (Cologne, Germany).
- Wire & Cable ASIA**: Published in English and Chinese languages. It shows a row of four covers and a world map with callouts for events: STAINLESS STEEL WORLD (Maastricht, The Netherlands), WIRE EXPO (Nashville, TN, USA), INTERWIRE (Atlanta, GA, USA), WIRE DÜSSELDORF METAV CABWIRE (Düsseldorf, Germany), and AMI CABLES (Cologne, Germany).
- wiredIn USA**: America's online magazine. It features a cover with the text "Digital Networking Monthly" and "America's online magazine". A graphic shows a hand holding a smartphone displaying the magazine's content, with the headline "Cable comes home" and an image of an astronaut.