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November 2016 issue - No 65

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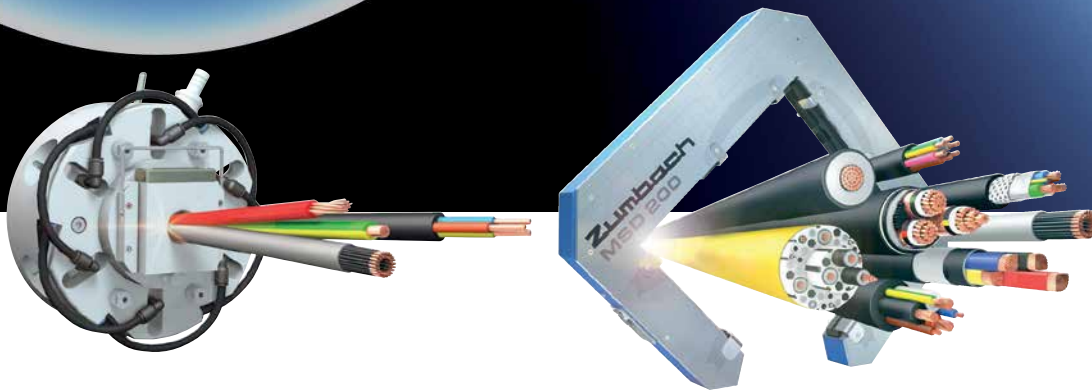


Wind farm Rush-ed in?



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#65 EDITOR

Routing problems are a regular thing for companies ever expanding their networks. And the work that some of these companies undertake is truly amazing, whether it is bringing renewable power to communities, or communications.

This has been highlighted in the latest issue of *wiredInUSA*, with a \$1.1 billion wind farm and 90-mile transmission line in eastern Colorado (page 9), the laying of 3,500 tonnes of cable under the Northumberland Strait between Prince Edward Island and New Brunswick (page 10), and the addition of fiber routes across the Rockies, taking in Salt Lake City, Reno, Las Vegas and Silicon Valley (page 12).

These problems can also provide environmental challenges. A quick glance to page 25 will show how engineers from the UK's Electricity North West have begun upgrading power cable under England's deepest lake, Wastwater in picturesque Cumbria. 560m of power cable will be pulled alongside the lakeside by engineers as part of the second phase of the \$700,000 project.

And stretching further afield to New Zealand, the cable-laying ship *Ile de Re* has docked in Auckland prior to laying a 2,300km cable from Ngarunui Beach in Ragland to Narrabeen Beach in Australia (page 34).

David Bell
Editor

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MAKING THE NEWS

Wind farm Rush-ed in?

Xcel Energy Inc's proposal for the \$1.1 billion 600MW Rush Creek wind farm and 90-mile transmission line in eastern Colorado has been approved by the Colorado Public Utilities Commission. The wind farm will generate enough power to meet the needs of about 180,000 homes in Colorado.

PUC chairman Joshua Epel said he was pleased by the settlement's broad support, which: "Significantly increases renewable energy in the state, will be a driver of economic development in rural Colorado, and helps sustain the renewable energy supply chain that has matured in Colorado, to support renewable energy in the state."

The commissioners wholly rejected a list of concerns raised by the Ratepayers Coalition, including

whether the project was good for taxpayers, whether Xcel was rushing the project through the process, and various environmental concerns.

The conservative Independence Institute in July had called for more time to evaluate the project's economics and environmental impacts.

David Eves, the president of Xcel's Colorado operations, told the *Denver Business Journal* that he was pleased with the commissioners' decision: "This is a great project for Colorado, the environment and our customers. This is a big day for what will be the state's biggest wind farm," he said.

Xcel will develop, own and operate the wind farm.



Island work gets underway

The *Isaac Newton*, the ship that will install two new electrical cables under the Northumberland Strait between Prince Edward Island and New Brunswick, is currently berthed in Charlottetown harbor and will begin work shortly.

The *Isaac Newton*, with its crew of 75, can carry up to 10,500 tonnes of cable. The PEI-New Brunswick project will use 3,500 tonnes.

“For cable installation itself, we’re estimating about two and a half to three weeks,” said Captain Stefan Van de Moortele. “Afterwards we also have to ensure that the cable is properly protected, and [it] can take up to four to six weeks to

bury the cable in a decent manner so that it’s protected against the environment for the next coming decades.”

The new cables are needed as the old cables, installed four decades ago, are at the end of their lifespan. Maritime Electric says the installation should be completed by the end of 2016.



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Crossing the Rockies

Windstream has announced plans to add fiber routes across the Rockies, bringing the markets of Salt Lake City, Reno, Las Vegas and Silicon Valley onto its physical network, and further plans to add additional western routes and markets next year.

The initial expansion leverages dark fiber to expand its 100G network to California from Denver by the end of 2016. With the initial buildout completed, Windstream plans a second phase to add a southern

route built on dark fiber between its Texas markets and Los Angeles via El Paso and Phoenix which, together with connectivity along the California coast, the company expects to finalize by the end of 2017.

The work will add 4,800 route miles to the company's network. Windstream's current long-haul backbone, and its new routes, use Infinera's DTN-X technology.



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Atlantic crossing

Facebook, Microsoft and TE SubCom have announced that TE SubCom will be the system supply partner for the new Marea submarine cable across the Atlantic Ocean.

TE SubCom has completed the route survey, and manufacture of the system has begun at its facility in Newington, New Hampshire. Cable laying will start next year, with a scheduled completion date of October 2017.

As announced by Facebook and Microsoft in May 2016, Marea is anticipated to have the highest capacity of any Atlantic subsea cable, featuring eight fiber-pairs and an initial estimated design capacity of 160Tb per second.

The new 6,600km submarine cable system will also be the first to connect the US to southern Europe, landing in Bilbao, Spain.

Led by Facebook and Microsoft, TE SubCom is constructing Marea to be interoperable with a wide variety of network equipment. This new open design brings significant benefits for customers, including lower costs and easier equipment upgrades as the system can evolve at the pace of developments within optical technology.

Aaron Stucki, president of TE SubCom, said: "We look forward to working with Microsoft and Facebook on what will be a highly advanced and scalable new system."

"This is one example of how Microsoft collaborates with industry leaders to drive innovation and build the next generation infrastructure of the Internet. Marea will offer better connections to users in Europe and beyond," said Frank Rey, director, global network acquisition, Microsoft Corp.

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Modernizing the NY grid

The New York State Energy Research and Development Authority (NYSERDA) is preparing to distribute \$3.5 million. The funding is part of a \$140 million grid modernization initiative, which aims to help the private sector to modernize New York's electric grid while making it both smarter and more efficient.

NYSERDA's grid modernization initiative will focus on the development of an advanced, digitally managed electric grid. As part of this effort, NYSERDA is seeking bids from firms with solutions to overcome identified and, as yet, unidentified engineering and technical challenges.

NYSERDA president and CEO, John Rhodes, said: "A critical part of modernizing our grid is to make it easier for renewable energy systems to integrate into it, especially as Governor Cuomo's

REV strategy encourages more of them to come online.

"This initiative will provide us with much needed solutions to connect more clean renewable energy sources to the electric grid." The request for proposals is targeted at clean tech companies and distributed energy resource providers, among others.

New York government previously announced its plan to generate 50 percent of its electricity from renewable sources by 2030.

New York State Department of Public Service CEO Audrey Zibelman said: "NYSERDA's initiative will help us appropriately address the technical challenges inherent with grid modernization and other benefits we expect under Reforming the Energy Vision."

Aftermarket appointment

Davis-Standard has appointed Paul Knorsch to the company as the aftermarket group and business development leader at German subsidiary ER-WE-PA GmbH. In his new role, Mr Knorsch will work closely with the global aftermarket team to support Davis-Standard products, locations and initiatives worldwide. He will be based in Erkrath and report to Kai Möllendorf, ER-WE-PA's managing director.

Mr Knorsch will play an integral role in driving aftermarket growth and supporting

customers. He will be dedicated to further enhancing the existing aftermarket offerings in spare parts management, retrofits and rebuilds, as well as control upgrades. In addition, Mr Knorsch will promote the latest technology for existing extrusion lines.

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Canadian Solar will deploy its modules at the Indian projects

Indian solar developments

Suzlon has linked with PV manufacturer Canadian Solar to advance 30MW of Indian projects.

Under the joint venture Canadian Solar will take a 49 percent equity stake in two special-purpose vehicle companies – Avighna Solarfarms and Amun Solarfarms – set up by Suzlon to execute 15MW installations at Ramannapet and Kamareddy in the state of Telangana.

Canadian Solar will provide its PV modules, arrange project financing and contribute its technology expertise.

It will be its first investment in the Indian solar sector.

Suzlon's move into solar comes after the company – a pioneer of India's wind power sector – won capacity in Telangana as

part of 2GW of state-backed PV tenders earlier this year. Suzlon initially plans to install PV projects aggregating 210MW at six sites across the southern Indian state.

A similar joint venture with China's Unisun Energy Group has also been established, in relation to a further 15MW project in Telangana. Unisun will acquire a 49 percent stake in the Vayudoot Solarfarms company with the option for a 100 percent stake in the future.

All the projects are due to be commissioned in 2016–2017 financial year. Suzlon group CEO JP Chalasani said: "Solar complements our existing strengths, infrastructure, and experience in wind, and we will leverage the same for executing solar projects."

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North Carolina utilities commission has rubber stamped the 230kV transmission line in Hoke County, NC

Transmission line gets the OK

The North Carolina utilities commission has issued a certificate of environmental compatibility and public convenience and necessity to allow Duke Energy Progress to build about three miles (six circuit miles) of 230kV transmission line in Hoke County, NC.

North American Electric Reliability Corporation (NERC) reliability standards require planning for the loss of any generator plus a transmission line. According to Duke Energy Progress, based on transmission line conditions by summer 2018, if a Brunswick nuclear station unit is offline, a loss of the common tower Fayetteville-Rockingham 230kV and Fayetteville-Raeford

230kV transmission lines is projected to cause the Weatherspoon-Raeford 115kV transmission line to overload.

According to Duke Energy Progress, the preferred route for the transmission line originates at the Raeford 230kV substation, exits the substation to the northwest and immediately crosses over the Raeford-Lumbee River 115kV transmission line.

The proposed in-service date for the new line is summer 2018, and the transmission project is expected to cost about \$9.5 million.

Securing Texan power

The LCRA transmission services corporation in Texas will install 21 miles of 345kV transmission lines to connect the Zorn and Marion substations.

County commissioner Jack Shanafelt explained that the project, which is planned for completion in May 2019, is a result of the closure of the San Antonio power plant. "When that happens, LCRA needs to bring more electricity to CPS and San Antonio and...the Austin-San Antonio corridor," he said.

The LCRA notice states the Bexar County's CPS Energy JT Deely generating station, which produces 845MW, will suspend operation by the end of 2018, and adds that the Electrical Reliability Council of Texas (ERCOT) needs a 345kV line by 2019 to prevent overloading existing circuits.

"The demand in this area has been growing, and that growth is expected to continue," LCRA public information officer Clara Tuma explained. "Electric system planning assessments indicate existing transmission lines are not adequate to meet the future demand for electricity, so the additional 345kV infrastructure is required to serve the future demand for Guadalupe, Bexar, Comal and Kendall counties in a safe and reliable manner. The ERCOT board of directors endorsed this project and deemed the Zorn-to-Marion 345kV transmission line critical to the reliability of the electric grid."

Sunshine cable

Southwire has launched its latest photovoltaic cable, designed to provide enhanced jacket protection on above-ground solar installations.

Southwire's super sunlight resistant (SSR) PV cable will withstand the solar rays that age jackets on exposed solar cables.

"As a leading manufacturer in the solar PV market, we are excited to introduce a new super sunlight resistant family of products," said Doug Ramsey, Southwire's senior vice president of industrial sales. "Customers have asked for PV products that maintain their color under the harsh sunlight and UV environment, and our SSR cable answers this request."

Understanding the challenges faced with harsh solar conditions, the company's engineers developed a solution to prolong and maximize sunlight resistance.

The SSR product has undergone extensive laboratory testing to demonstrate its color retention, as well as tensile and elongation attributes.



Rebar reinstatement

Seven US stainless steel bar producers have filed a request for changed circumstances reviews through the US Department of Commerce. The group argues that Viraj Profiles and Venus Wire Industries Pvt Ltd should be immediately reinstated under the existing anti-dumping duty order on competing product from India. The companies are contending that, following revocations from the order, Viraj Profiles and Venus Wire resumed dumping rebar and other stainless steel bar products in the US.

The commerce department granted revocation to Viraj Profiles and Venus Wire on the understanding that the order would be immediately reinstated if they were later found to have resumed dumping stainless steel bar into the US market.

“The available evidence shows that Viraj Profiles and Venus Wire have resumed

dumping. As such, they should no longer be entitled to benefit from their conditional revocation from coverage under the anti-dumping duty order. If the anti-dumping duty order is to function properly, the department must ensure that conditionally revoked companies adhere to the conditions of their revocation agreements,” stated the US producers’ counsel, Larry Lasoff. “The dumping practices by Viraj Profiles and Venus Wire must be addressed immediately or their behavior will significantly damage the effectiveness of the existing anti-dumping duty order on stainless bar that US producers worked so hard to put into place.”

The domestic producers are Carpenter Technology Corp, Crucible Industries, Electralloy/G O Carlson, North American Stainless, Outokumpu Stainless Bar, Universal Stainless & Alloy Products, and Valbruna Slater Stainless.

EUROPE NEWS



Work has begun on the upgrade to 3km of power cable under Wastwater. Photograph courtesy of www.visitcumbria.com

TAKING THE PLUNGE FOR LAKESIDE UPGRADE

Engineers from the UK's Electricity North West have begun work to upgrade 3km of power cable under England's deepest lake, Wastwater.

The second phase of the \$700,000 project will involve engineers pulling the new cable across the lake by boat, following the installation of 560m of power cable along the lakeside in the remote village of Wasdale Head in Cumbria last month. The original electricity cable was installed under Wastwater in 1977.

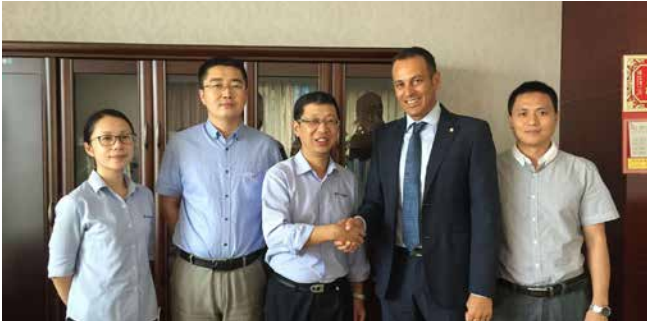
Martin Deehan, operations director for Electricity North West, said: "The time is right to proactively replace sections of the power cable, to help ensure the local residents

and businesses receive the essential power they need for years to come.

"This is an incredibly difficult job due to the extremely remote location and sensitive area. The lake itself is a designated site of special scientific interest, as is a large area of the scree slopes alongside.

"We have been working closely with the local community and they have showed us great support towards the work we are doing in the area."

The project will be completed during November, after a planned shutdown to allow engineers to connect the new cables to the network.



The team from Yongxing Special Stainless Steel Co Ltd which purchased the new Danieli billet grinding facility. Photograph courtesy of Danieli

Billet grinding facility process

Yongxing Special Stainless Steel Co Ltd (YXSS) is a developer and producer of special stainless steel rod and wire for petrochemical, energy, and equipment manufacturing applications. The company has purchased a new Danieli billet grinding facility, to be installed in Huzhou, to perform full skin conditioning on a range of special steels, including stainless grades 200, 300 and 400 series, and high temperature and anti-corrosion alloy steels.

The 200kW grinder will be driven by the HiGrind system which controls the consistency of the material removal depth, and monitors all the processing and safety functions.

The supply will include loading and unloading benches to maintain the fully automated process and a fast set-up of the plant. It is designed to process approximately 40,000 tonnes of square billets per year, in sizes of 150mm, 180mm, and 220mm with a maximum length of 7m, and is scheduled to be in full operation in early 2017.



Finding finance

Aqua Comms DAC has entered into an agreement with the Ireland Strategic Investment Fund (ISIF). The fund has invested \$25 million in equity capital that Aqua Comms will use to accelerate customer growth on its existing networks, as well as begin exploratory works on new routes. In addition, ISIF has stated its interest in funding up to a further \$25 million of equity capital, with a similar amount from co-investment partner Cartesian Capital Group LLC, to accelerate the expansion of Aqua Comms' planned new routes. Cartesian has previously invested \$50 million in equity capital in the Aqua Comms business.

Aqua Comms already operates a number of subsea fiber optic networks, including the recently completed AEOConnect transatlantic subsea cable system. The system offers a direct route diverse from existing transatlantic systems to support metro networks and data center interconnectivity to all of the major data centers in Ireland, London and New York. The 6,300km network allows businesses to scale against increased future capacity requirements and is also believed to be the most secure cable system in existence.



New transmission record?

Nokia's Alcatel-Lucent Submarine Networks division has set a data transmission record of 65Tb/per second, via a 4,100-mile undersea fiber link.

Nokia says that the 65Tb capacity is capable of simultaneously streaming 10 million HDTV channels. Nokia added that it represents 13,000 times more capacity than the first undersea amplified transatlantic system, deployed in 1995. Alcatel-Lucent was acquired by Nokia in 2015.

"This new record is the latest in a long series of achievements by Alcatel-Lucent Submarine Networks over the past 20 years, with breakthroughs that have transformed long distance data transmission," wrote Alcatel-Lucent Submarine Networks CTO Olivier Gautheron.

In terms of capacity, Alcatel-Lucent Submarine Networks claims to "lead the industry" with over 360,000 miles of fiber cable deployed around the globe.

High voltage acquisition

nkt cables is to acquire ABB's global high voltage cable system business. The business is part of ABB's power grids division, which is currently undergoing a strategic review.

nkt cables designs, manufactures and supplies power cables for low, medium and high voltage solutions, mainly in the AC product area.

It has major production facilities in Europe and China and employs around 3,200 people.

"We are combining two strong cable portfolios, rooted in a shared Nordic heritage, that will be more competitive on a larger scale under nkt cables' ownership, while maintaining access to supply through a long-term strategic partnership," commented ABB's CEO, Ulrich Spiesshofer. "The combination of our niche cable system business with the strength of nkt cables demonstrates our commitment to active portfolio management, a key element of our next level strategy."



Moves towards an ultra-high voltage system

ABB has developed, manufactured and energized a 1,200kV ultra-high voltage power transformer to support India's plans to build a 1,200kV transmission system, supplementing its existing 400kV and 800kV transmission grid.

The 1,200kV transformer is said to represent the highest alternating current voltage level in the world, and has been installed at the national test station at Bina.

The new transmission system will help strengthen the grid and enhance load capacity up to 6,000MW. Transmission at higher voltages enables larger amounts of electricity to be transported across longer distances, while minimizing losses. At the same time, less space is needed for fewer transmission lines, which reduces the environmental impact and overall cost.

In addition to the transformer, ABB has developed a 1,200kV circuit breaker that was previously commissioned at the test station. This was the first hybrid gas insulated switchgear in the world to be energized at this voltage level. The uniquely designed circuit breaker is safely housed with the disconnecter in a tank filled with insulating gas, resulting in a space saving potential of up to 60 percent compared with conventional designs.

Windfarm's assessment process

Vattenfall has revealed some early plans for its windfarm scheme off the coast of Norfolk, UK, including a decision to bury around 50km of onshore transmission cables underground.

The Swedish company, which launched the Norfolk Vanguard offshore windfarm in March this year, is seeking views from technical specialists, local authorities, public agencies and local people to support understanding of the project's environmental impact.

The outcome of the environmental impact assessment, and future consultations, will help shape the final consent application before it is submitted for examination by the Planning Inspectorate, a UK government planning agency. The secretary of state for energy will decide on whether to give consent for the project.

The company has distributed over 20,000 newsletters to north Norfolk residents, inviting them to seven public information days to discuss the windfarm plans and the scope of the assessment.



HighWire seeks low cable

On behalf of its client Boskalis, Dutch subsea technology company Seatools has completed the upgrade of a HighWire survey grade taut wire system. The upgraded position reference system will be deployed to determine the position of a subsea cable plough during a subsea cable installation project executed by Boskalis.

Initially delivered in 2001, the HighWire system was used during the installation of submerged sewage outfall pipes in challenging conditions. For this latest use, the wire orientation needed to be changed from nearly vertical to nearly horizontal. Although the update required fundamental modifications of both the system's mechanical design and its software, alterations were completed in just three weeks.

The upgraded system performed well during factory testing, improving on the 2001 accuracy level of 1cm measured across significant distances. The system's high level of accuracy will provide significant value for subsea cable owners, facilitating easy identification and recovery of a buried cable when in need of repair.

Third Serbian cable facility

Leoni AG has signed an agreement for the construction of a new facility in Nis, Serbia. The agreement stipulates Leoni AG investing in the construction of a new car cable production facility and the creation of 2,200 new jobs.

Serbian prime minister Aleksandar Vucic said the foundation stone will be officially laid in December, with the facility expected to begin operations in August 2017.

Leoni AG is a producer of car cable installations, last year recording around 75,000 employees in 92 production facilities, generating revenue in 32 countries. The company has been operating in Serbia since 2009 with facilities in Prokuplje and Doljevac. It will receive state subsidies for newly created jobs.

ASIA & AFRICA NEWS



REAPING THE DESERT SUN

Abu Dhabi's renewable energy company Masdar has signed an agreement to supply power from the proposed 200MW photovoltaic solar plant in Jordan to National Electric Power Company (NEPCO).

An agreement was signed in January between Masdar and the Jordan Ministry of Energy and Mineral Resources for the development, ownership, operation and maintenance of the country's largest solar energy plant. Masdar's wholly owned subsidiary, Bainounah Power, will be responsible for the overall development of the project.

Generated power will be sold to NEPCO.

Jordan energy minister Dr Ibrahim Saif was quoted: "Today's signing marks the

forward progress of a significant investment in Jordan's energy security, in line with His Majesty King Abdullah II's vision to diversify the country's energy mix and to meet future domestic power demand growth through sustainable sources."

Masdar CEO Mohamed Al Ramahi said: "This flagship project will harness Masdar's proven expertise and experience in utility-scale clean energy, and pave the way towards future projects in the kingdom and elsewhere."

The solar plant, together with the Jordan Wind Project's 117MW Tafila wind farm, are expected to contribute to the country's goal to generate 15 percent of its total power from renewable sources by the end of the decade.



Board changes

Fiber optic cable and accessories manufacturer AFL has a new chairman. AFL's parent company, Fujikura Ltd, has appointed Yoichi Nagahama as chairman of AFL, to succeed Takamasa Kato. In addition, Fujikura has appointed Satoru Ogawa as vice chairman.

Nagahama joined Fujikura in 1973 and has held several positions, including vice president of Fujikura America Inc, and president and CEO of Fujikura Ltd. He has also served as a member of the board for Fujikura. Currently, Nagahama serves as chairman of AFL as well as chairman of the board and representative director of Fujikura. He was instrumental in the joint venture between the Aluminum Company of America (ALCOA) and Fujikura Ltd, now known as AFL.

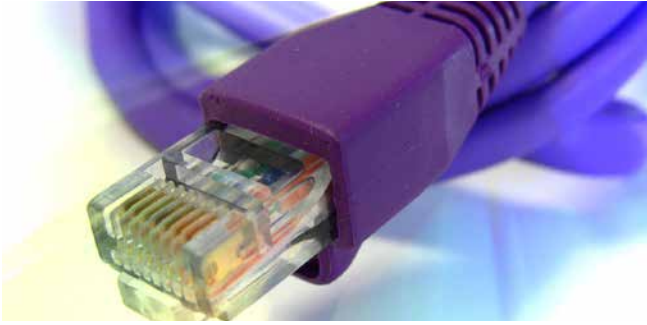
Ogawa joined Fujikura in the research and development department, where he focused on developing manufacturing capabilities and methods. Over the next 30 years, Ogawa held positions including product engineering, general manager and general director. As vice chairman of AFL, Ogawa will oversee all business functions and various manufacturing facilities and sales initiatives worldwide. He also represents AFL with the Japan American Association of South Carolina (JAASC).

Trans-Pacific route

TE SubCom, Facebook, Google, and Pacific Light Data Communication Co Ltd (PLDC) are to co-build the 12,800km Pacific Light Cable Network (PLCN).

The cable will use TE SubCom's C+L technology, which effectively doubles the available bandwidth and capacity per fiber pair over a traditional C-band-only designed system. Scheduled for commercial launch in the summer of 2018, PLCN will provide the first direct undersea route between Hong Kong and Los Angeles, and is anticipated to be the highest capacity trans-Pacific route.

"PLCN will be among the lowest-latency fiber optic routes between Hong Kong and the US, and the first to connect directly using ultra-high capacity transmission," said Mr Wei Junkang, the chairman of PLDC. "It is certainly gratifying that global technology companies like Google and Facebook have become co-investors in PLCN. It is a strong signal that PLCN will be trusted to address the capacity needs for internet and international communications services throughout the Pacific Rim. We envision this deployment as the initial step in PLDC's construction of a global network."



Island network

Huawei Marine is to help Papua New Guinea (PNG) to build a national broadband transmission network.

Located in the South Pacific, Papua New Guinea is an island nation with mountains and volcanoes, where domestic telecommunications largely relies on satellite and microwave communications. Huawei Marine and PNG DataCo Ltd, the telecommunications carrier established by the PNG government, will construct a national submarine cable network to provide the backbone telecommunications needed by the nation's major coastal centers and islands.

At 5,457km in length, the submarine cable network will provide domestic connectivity across 14 main cities (PNG's largest population centers) and international connectivity via a link to Jayapura in Indonesia.

The design capacity of the system is 8Tb per second, which will handle projected increased bandwidth demand over the next 10-15 years. When completed, the network will cover 55 percent of the population and will provide over 70 percent of Papua New Guinea's domestic bandwidth requirements.

Managing cable risk

The Carbon Trust's cable burial risk assessment (CBRA) guidelines, co-authored by Cathie Associates, are being used by the Ceres project in Australia. This represents a significant step forward in the acceptance of CBRA as best practice in the subsea power cables sector.

The guidelines, officially released by the Carbon Trust in February 2015, focus on identifying the most efficient, risk managed and tailored cable burial requirements.

South Australia's 60km Ceres project will be the first to connect wind power to a capital city via an undersea cable. On completion, the project will deliver 600MW of electricity.

Senvion Australia engaged Cathie Associates to carry out the CBRA for the marine section of the project's subsea grid connection cable.



Enamelled wire convention

Sri Lanka-based Kelani Cables PLC has held its annual dealer convention for its enamelled wire dealers. The event, headed by Kelani Cables PLC director and CEO Mahinda Saranapala, was held at Taj Samudra Hotel and attended by 140 dealers from across the island.

Mahinda Saranapala said the enamelled wire wing could be treated as the backbone of Kelani Cables: "Our dealers contribute immensely to the company's forward march. They are the live-wire behind achieving our sales targets year by year. Thus, we treat this friendly get together as an occasion that adds value to their business success. This is recognition for their commitment."

Kelani Cables is ISO 9000:2008 certified for quality, ISO 14001:2004 certified for better environment management, has a National Standards award and is a Gold winner of the Taiki Akimoto 5S award. In 2015, the company was given an Asia's best employer award.

Cable-laying ship comes to port

The specialized undersea cable ship *Ile de Re* docked in Auckland in October, en route to the Tasman Sea where it will continue laying the final section of the Tasman global access (TGA) undersea cable.

Telecommunications companies Spark, Vodafone and Telstra are investing approximately \$100 million to build the TGA cable, which will stretch 2,300km from Ngarunui Beach in Raglan, to Narrabeen Beach in Australia.

Vodafone Wholesale director Steve Rieger said: "The *Ile De Re* is responsible for building or maintaining more than 50,000km of submarine cable systems throughout the South Pacific – it is a very impressive vessel that is capable of some remarkable feats of engineering."

Weighing 5,378 tonnes, and over 140m long, the ship was in port for a day before returning to the Tasman Sea to lay the final stretch of cable and connect it to the Raglan landing. The TGA cable is expected to start carrying data across the Tasman at the start of 2017.



New plant for Ivory Coast

Nexans Morocco is to invest around \$13 million to establish a wire production plant near Abidjan, Côte d'Ivoire.

The 30,000m² plant will be in operation by 2018 to produce electric wire for residential constructions and office buildings, as well as low and medium voltage cables, electric stations and transformers.

Nexans Morocco will work in partnership with the West African industrial Envol Group. Nexans will hold 60 percent of the joint venture.

The operation permit was granted to Nexans following a presentation of the project to the Ivorian authorities. "In West Africa, the most promising market is Côte d'Ivoire, which accounts for 40 percent of GDP with the average growth rate put at 9 percent yearly," a Nexans Morocco spokesperson said.

Nexans Morocco has been a subsidiary of Nexans group since 1947, and is active not only in Morocco but in the Maghreb and African market in infrastructure, industry and building sectors. The company has two production plants, in Casablanca and Mohammedia. The Mohammedia facility is solely involved with electrical cables.

Saudi grid expansion

LS Cable & System has announced two orders, worth \$67 million, to supply extra-high voltage cables to Saudi Arabia. Saudi Electricity Company will use the cable to expand the power grid in Riyadh and Jeddah. The Korean cable company signed the contracts with the EPC company conducting the project.

LS Cable & System has previously supplied submarine cables and underground power cables to Saudi Arabia with a capacity of over 380kV

"With increasing urban population and new town development, we have made utmost efforts for marketing in the Middle East as we expect that the region would expand investments in power grid in the future," said Yoon Jae-in, LS Cable president.

PRODUCTS
MACHINES
TECHNOLOGY



Handheld help for fiber installations

Ideal Networks has launched its Optical Certifier I (OCI) for multi-mode and single-mode fiber cabling. The OCI has been designed to deliver the fastest automated loss, length and polarity certification of fiber links against international industry standards, maximizing efficiency and reducing the cost of ownership.



▲ The Optical Certifier I (OCI) for multi-mode and single-mode fiber cabling from Ideal Networks

Developed to help installation contractors, engineers and IT maintenance technicians achieve faster system acceptance, the OCI fiber certifier has a suite of user-assistance features, high-resolution touchscreen and integrated WiFi and Bluetooth connectivity.

Tim Widdershoven, global marketing manager at Ideal Networks, explained that the features provide expert guidance throughout the test process: “This increases efficiency by removing the risk of errors or negative loss, even for first-time users.”

He continued: “With the emergence of big data, OTT services and the advent of virtualization – from cloud services to SDN and NFV – more and more is expected from the networks. Higher speeds, greater storage capacity and increased agility are required, and it is necessary to ensure that the network infrastructure can support these transformations without impacting the quality customer experience and business-related SLAs.

“By adopting and applying industry best practices, this certifier helps installers to continue to offer a high level of service in a changing network infrastructure landscape. It allows fiber inspection to become a more efficient, one-step process that can be carried out by technicians of any skill level.”

New welding wire

Sandvik has added a new welding wire and covered electrodes to its Sanicro™ line of nickel-based welding materials.

Complementing the introductions is a new flux, Sandvik 69S, designed for ESW high-speed cladding. The nickel-based grades include Sanicro 55 welding wire (alloy 686/ERNiCrMo-14), as well as four covered electrodes: Sanicro 53 (alloy 617/ENiCrCoMo-1), Sanicro 54 (alloy C22/ENiCrMo-10), Sanicro 56 (alloy 276/ERNiCrMo-4), and Sanicro 59 (alloy 59/ENiCrMo-13).

The new products have been developed for fabricators offering welding services to the oil and gas, chemical, and petrochemical industries, and on pollution control equipment for thermal power and waste incinerators.



▲ The new addition to the Sanicro line from Sandvik

Latest insulation development

Prysmian Group has announced the successful development and testing of its P-Laser 600kV cable system for HVDC applications.

“This milestone innovation shapes the progress of the entire HVDC cable industry, reaching 3.5GW per bipole, the highest power rating ever, with cost reductions of up to 30 percent per transmitted MW,” said Massimo Battaini, senior vice president energy projects at Prysmian Group.

P-Laser uses an in-house developed thermoplastic elastomer – known as HPTE

– that permits a more efficient cable production with lower environmental impact than traditional XLPE, where the manufacture is performed in a single and continuous process. A key feature of this insulation technology is that, compared to XLPE, it does not require a chemical reaction during manufacture to achieve the material properties required for the long term electrical integrity of HVDC insulation systems. This feature gives the additional benefit of shorter production times and results in reduced energy consumption and lower greenhouse gas emissions.

P-Laser technology is fully compatible with existing cable and accessory technologies and is said to provide better electrical performance and higher reliability compared to traditional XLPE-insulated cables.

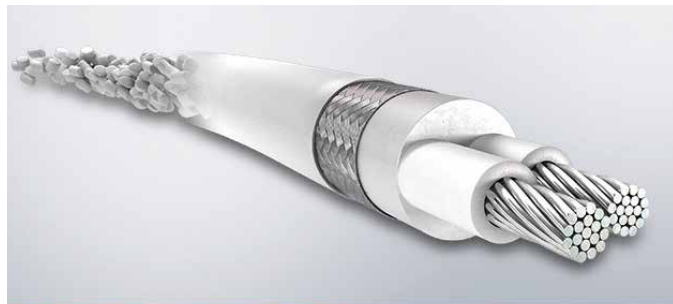
Flexible compounds

Melos GmbH has released Mecoline RDX sheathing and insulation compounds for E-beam cross-linking.

Based on fluoropolymers, the new compounds have been developed for primary insulation and jacketing of cable systems. Fluoropolymers demonstrate exceptional performance in environments where there is a risk of contact with fuel, oil, solvent, or aggressive chemicals, and under very high or low temperature conditions.

The compound can be safely used in harsh environments such as engines, fuel tanks, aeroplanes, helicopters and satellites.

The primary insulation and sheathing will withstand cold and hot conditions and resist chemicals and oxygenated automotive fuels, even biodiesel fuels. The compound is generally compatible with hydrocarbons and is naturally UV-resistant. Depending on the cable constructions, it will meet the stringent requirements of ISO 6722 class F for thin wall shielded battery cables and worldwide defense and automotive specifications.



▲ Mecoline RDX sheathing and insulation compounds from Melos

Mecoline IS RDX 5244 F can tolerate continuous operating temperatures over 250°C, retaining its mechanical properties. Oil and chemical resistance also are relatively unaffected by elevated temperatures.

This Mecoline compound will keep its functional elastic properties when exposed to air oven aging up to 3,000 hours at 204°C (400°F) or to test exposures up to 168 hours at 250°C (482°F).

High temperature tests of 4 hours at 300°C (572°F), cold impact at -40°C, and low temperature flexibility tests at -70°C show no cracks.

The material is highly flexible in use, and can be easily routed in tight areas with limited space.

Let's split

Leoni has launched splitter cable systems (QSFP28 to 2×QSFP28) to combine extremely fast data transfer with high port density, and to facilitate connection of one switch with two further switches.

In addition, Leoni is providing splitter cable systems for large data centers. These are assembled copper cables where the three cable ends (in contrast to breakout systems) are based on QSFP1 connector technology. Breakout systems can consist of various technologies, such as SFP and CXP.

Splitter cable systems allow a switch to be connected with two further switches. The transfer rate is thereby split from 100Gb per second to 2×50Gb per second, which

significantly increases the port density in switches when using a homogeneous technology (QSFP). In contrast to a conventional QSFP port with a data transfer rate of 40Gb per second, the splitter cable system enables two switches to be supplied at the same time via a QSFP28 port at rates of 50Gb per second each.

All three QSFP28 cable ends are fitted with an EEPROM2, which identifies the respective cable end. The splitters are equipped with a bulk cable that transfers 25Gb per second, per channel, using copper and available in various jacket materials and structures. The bulk cables have UL approval for use in the American market. The cable's transmission properties can be optimized with stable and consistently structured dielectrics, allowing very small diameters to be achieved.

New cable has less impact

Nexans has worked in collaboration with a French public electricity distribution network to develop and test an advanced medium voltage cable. Known as EDRMAX by Nexans™, the new cable is designed for reduced environmental impact, and is said to allow easier installation in challenging conditions such as hard or rocky ground.

The EDRMAX by Nexans range has been designed specifically to enable the grid connection of renewable energy resources such as solar panels or wind turbines, and is compliant with the NFC 33-226 standard.

It is available in single- or three-core versions, with either an aluminum or copper conductor. EDRMAX allows a maximum permissible current in permanent service above 400A and has a class 2 rating for flame non-propagation performance.

A key advantage of the design is the high mechanical strength provided by over-sheathing, that allows the cable to be buried directly into the ground with no need for an additional sand layer. The flexibility of the cable makes it easy to handle and this, combined with its high stripability, provides a faster connection.

EDRMAX is one of the first cables to comply with Nexans' new eco-design approach that takes account of the entire product life cycle, spanning manufacture, use, and end-of-life. Joule losses have been significantly reduced, compared with the existing EDR, and this alone contributes to a 12 percent lower impact on global warming across the entire cable life cycle from raw materials to recycling.

HDVC developments

Nexans reported three significant developments in HDVC cables. Its cross-linked polyethylene (XPLE) insulated HVDC design is now fully qualified for 320kV applications; successful type testing at 525kV has been completed; and the company has qualified the first 600kV mass impregnated cable with a paper-based insulation.

Nexans believes the three cable technologies, namely XLPE insulation, mass-impregnated paper insulation and superconductors, “provide TSOs with the most appropriate solutions for their HVDC links”.

Nexans XPLE cable qualified for land and submarine applications at 320kV through the combination of type tests and long term pre-qualification tests, carried out to international standards. The same principle was applied to achieve the successful completion of a type test at 525kV.

Mass impregnated HVDC cables are generally preferred for long distance submarine transmission at the highest voltages recent examples include the 100km subsea element of Canada's 900MW interconnection between Labrador and Newfoundland, and the Skagerrak 4 interconnector between Denmark and Norway.

This type of cable has been used for a number of power transmission links operating at voltages up to 525kV, and a power rating exceeding 800MW per cable. Nexans has now qualified the first 600kV mass impregnated cable with a paper-based insulation, providing a power transmission capacity of 1,900MW in a bipole configuration.

Connector co-workers

Connector suppliers Huber+Suhner, Radiall and Rosenberger are jointly developing

a new RF connector system for small cell applications.

As the telecommunications industry moves towards smaller equipment and small cell approach, radios and antennas become smaller and require a small-sized, but high performing, coaxial RF connector. The new NEX10TM connector system is designed for robustness, PIM stability and the flexibility of different coupling mechanisms (torque/screw and push-pull). Minimum flange height is 12.7mm.

The NEX10TM connector operates to 20GHz with excellent return loss, and offers PIM stability independent of torque and vibration even with the push-pull mechanism. The interface's robust design eliminates damage during installation or operator errors, and is optimized for cable sizes of up to ¼ inch corrugated cables.

A weather protection boot, which is part of the interface, allows outdoor use under extreme weather conditions. In addition, the possibility of multiple coupling mechanisms allows full flexibility in installation.

The target of the three collaborating RF connector manufacturers has been to develop a small coaxial connector system to meet the existing and future demands of small cell networks for 4G and upcoming 5G networks.

The NEX10TM interface will be ready for volume production in 2017.

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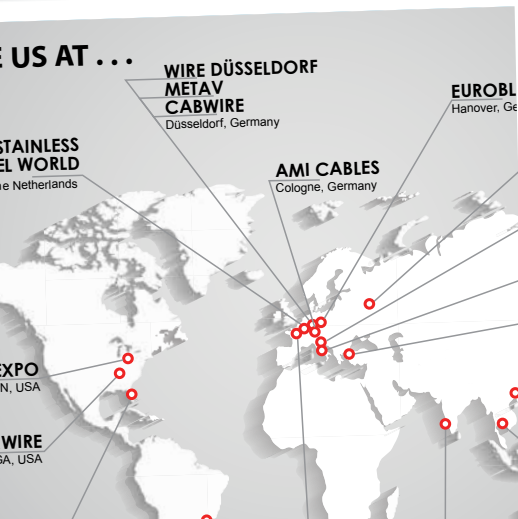
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