

FTTH Deployment News

By Masha Zager ■ Telecom Editor

Lafayette Utilities System

Broadband Properties spoke with Terry Huval, director of the Lafayette Utilities System in Lafayette, Louisiana, shortly after LUS won the court battle that had stalled the building of its planned fiber-to-the-home network. Huval outlined the utility's plans for moving forward quickly: issuing bonds, buying property to locate the headend, contracting with a design firm (Atlantic Engineering Group, www.atlantic-engineering.com, based in Georgia, has since been selected), and hiring and training 50 new full-time employees. LUS has issued a request to FTTH vendors for updated information about their offerings, but has not yet made a commitment to any specific technology.

On March 8, LUS held a public Fiber Forum, the first of several meetings intended to discover what residents hope to gain from fiber to the home. Between 60 and 70 people attended (a few of them competitors taking notes, according to Huval), and shared their ideas. Many of them wanted access over the network to classes at local educational institutions. While most schools in the parish are already connected to LUS's fiber system, and have access to videoconferencing and video broadcasting, the addition of fiber to the home should allow them to make classes available to students who are homebound due to illness, or to other community members who want to improve their skills. Other types of community programming were also in demand – for example, the ability to broadcast school plays and concerts.

Residents at the Fiber Forum also expressed interest in communicating with one another at higher speeds than they could use for accessing the larger Internet. They wanted to be able to use very high speeds locally for gaming, file transfer, and even telemedicine. Other requests included:

- Utilities applications that would

eliminate meter reading, help customers manage their utility consumption, and send alerts about malfunctioning equipment.

- Video monitoring systems for security.
- Traffic control systems that would optimize traffic flow and take pictures of cars running red lights.

Finally, LUS is working with other groups in the city to address the digital divide and to leverage the fiber system for economic development. "That's the real value of this project," Huval said. "It raises the entire community up to a new level."

Other Municipal Fiber Projects

In Tullahoma, Tennessee, the local Utilities Board received an enthusiastic response at the public hearing on its proposed FTTP network and proceeded to request a \$17 million bond issue that would enable it to build the network and deliver triple-play services. However, the city's mayor has expressed reservations about the project and said he is considering an independent review.

The Truckee Donner Public Utility District in California won an appellate ruling against a local broadband provider that objected to the utility's plan to build a fiber-optic system. The case may still be appealed to the state Supreme Court.

Burlington Telecom, the municipal utility that is installing fiber to the home in Burlington, Vermont, is reportedly in negotiations with nearby towns including the state capital, Montpelier, to extend its network beyond the town borders.

New Communities

Lake Las Vegas, a 3,600-acre development in Nevada with a planned 10,000 residential units, hotels and championship golf courses, will have a fiber-to-the-home deployment featuring the Evolant Advantage Optical Solution from Corning Cable Systems ([\[www.corning.com/cablesystems\]\(http://www.corning.com/cablesystems\)\). New Village Communications \(\[www.newvillagecommunications.com\]\(http://www.newvillagecommunications.com\)\) is providing the FTTH infrastructure and services for the development, and Video Communications Engineering \(\[www.vcelv.com\]\(http://www.vcelv.com\)\) provided turnkey services including system engineering, material procurement and construction services.](http://www.</p>
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FTTH network builder Connexion Technologies (www.connexiontechnologies.net) of Cary, North Carolina, has announced that it is working with six different development companies in North Carolina and Florida to install fiber to the home in their new communities: Sayan, a high-rise overlooking the Atlantic in Sunny Isles Beach, Florida (J. Milton and Associates); Sonesta Orlando Resort at Tierra del Sol, a Mediterranean-inspired community in Central Florida (American Leisure Real Estate Group and Resort Development Group); The Loft Downtown II, a high rise with almost 500 lofts in Miami, Florida (The Related Group); Highlands at Walnut Creek, a mountain community in Western North Carolina (Highlands Mountain Properties); The Park Condos, an upscale midrise residential project in Charlotte, North Carolina (Verna and Associates); and The Point Orlando Resort, a Mediterranean-style high rise in Orlando, Florida (Seymour International).

FiOS

Verizon announced that it is ready to begin upgrading the FiOS infrastructure to GPON, using Alcatel-Lucent equipment for both optical line terminals in the central offices and optical network terminals at customer premises. The new technology will be rolled out on a trial basis to a group of customers in Lewisville, Texas, early in the second quarter, and then to a group of customers in Kirklyn, Pennsylvania, over the summer. If the pilot projects are successful, Veri-

zon will announce plans for a larger-scale rollout. Replacing FiOS' current BPON equipment with GPON will increase aggregate broadband speeds by 4 times downstream to the customer, and by 8 times upstream back to the Internet.

"Classic" FiOS continues its growth, with a major network expansion in Sarasota County, Florida, and new FiOS TV deployments in New York, Massachusetts, Virginia, Maryland and Oregon.

International Deployments

NetCologne (www.netcologne.de), a German telecommunications company providing services for the Cologne, Bonn and Aachen regions, will be deploying fiber directly to more than 50,000 buildings in the city of Cologne. Within the buildings, they will deliver triple-play services via VDSL2 over the existing copper infrastructure, using Ikanos'

Fx 100100-5 Central Office (CO) and Fx100100S-5 Customer Premises Equipment (CPE) chipsets. This deployment will provide up to 100 Mbps – one of the highest VDSL2 bandwidths available to consumers in Europe.

Chunghwa Telecom in Taiwan says it had 185,000 subscribers to its fiber-to-the-building VDSL2 service at the end of 2006; while the total bandwidth available is 100 Mbps, subscribers currently receive Internet access at 10 Mbps downstream and 2 Mbps upstream. The company expects to have 580,000 subscribers by the end of 2007.

Japan's NTT, the largest FTTH provider in the world, announced that fiber-to-the-home subscriptions passed the 6 million mark, and, more significantly, surpassed ADSL subscriptions for the first time. (ADSL subscriptions are now 5.3 million, down about 6 percent from

the previous year.) The company expects to have 30 million FTTH subscribers by 2010. For Japan as a whole, the country's Ministry of Internal Affairs and Communications says that there were 7.94 million FTTH subscribers as of year-end 2006, and that fiber's share of the broadband market now exceeds 30 percent.

Indonesian ISP Biznet has launched the first FTTP service in the country, serving both business and residential customers with a network based on Siemens GePON technology. Biznet operates in Indonesia and South East Asia. The first test area is in the Melawai area of Jakarta, and other areas in Jakarta are currently under construction. Biznet will offer Internet service up to 5 Mbps but can scale up to 100 Mbps in the future. In addition, Biznet Bandwidth on Demand lets customers upgrade bandwidth temporarily to accommodate videoconferencing, large file downloads or online gaming.

Easier Inside Plant Installations

Another sampling of the new technologies that make installs easier at the customer end.

Furukawa America Unveils Connector Termination System

From BBP Wires

PEACHTREE CITY, GA – Furukawa America (www.furukawaamerica.com) introduced a new splice-on connector system that increases speed and limits insertion loss during field repair and customized fiber-to-the-home installations. The system consists of factory-polished ferrules with pre-cleaved fiber stubs, along with high-strength, snap-on connector assemblies. Total insertion loss using this method measures 0.30 dB or less for single mode fiber. The system, which is available in SC and FC connector types, also enables quick, made-to-length drop cable installations, a field customization that traditionally requires excess and costly pre-terminated jumpers and splice trays.

Allied Telesis Intros Multiservice Residential Gateways

From BBP Wires

CHIASSO, SWITZERLAND – Allied

Telesis (www.alliedtelesis.com) launched the AT-iMG616, its new series of intelligent Multiservice Gateways for fiber-to-the-home residences. Key new features include six 10/100TX ports (compared to three in the company's earlier gateways), enabling customers to connect more computers or set-top boxes to the Internet without external routers; remote configuration and management; and top-flight security protection.

The gateways install easily using a low-cost fiber wall outlet with an optional locking mechanism that prevents the user from inadvertently removing it. When power is applied, the gateway immediately starts communication via the fiber port. Allied Telesis' Zero Touch Configurator software, in place at the service provider's premises, automatically starts a secure authentication and registration process and sends configuration information back with no user intervention necessary.

Residential customers can plug an existing telephone into one of the gateway's

analog ports, providing the equivalent of an extra phone line for other members of the household or for connection of a fax machine or other analog device.

Miniflex Demonstrates Sharply Bendable Microduct

From BBP Wires

FRAMLINGHAM, UK – Traditional microduct technologies have poor bend limiting capability and cannot cope with tight bends. British vendor Miniflex (www.miniflex.co.uk) has developed a microduct technology using hard plastic compounds with high tensile and compressive strengths, which it says avoid these limitations. Last month Miniflex demonstrated a new fiber-to-the-home installation system, MF₂C, based on this technology.

MF₂C consists of DVC Microduct, TuffNut Cable and the WAM installation system. DVC Microduct has a patented hard lining, bend limitation, and higher crush resistance and can negoti-

ate bends of half the diameter typically specified. It is designed to allow fiber cable to be installed via the WAM installation system. Using WAM, Miniflex says the TuffNut cable can be installed much faster over twice the typical distance encountered during installation in multi-dwelling residential buildings.

Tilgin Announces Home Gateways with Eye to the Future

From BBP Wires

HANOVER, GERMANY – Tilgin (www.tilgin.com), a provider of customer premises equipment for triple-play services, announced new home gateway products for ADSL2+, FTTH and Ethernet connectivity.

The new Vood 1000 gateways allow operators to provide fast, flexible and competitive triple-play services. Voice over IP is provided for analog and ISDN telephones, with support for wideband codecs that deliver high-definition audio. They also enable multiple high-definition IPTV streams to be simultaneously delivered within the home.

Setting the ground for future industry developments outside existing triple-play services, each gateway includes remote

management support, high-performance routing, fully managed multicast LAN switching, and a capacity for IMS service upgrades. As a result, operators will be able to deliver a growing number of new and converged information, communication and entertainment services without a need for the costly and time-consuming rollout of new gateways.

Fujikura Offers Bend-Tolerant Fiber

From BBP Wires

CHESSINGTON, UK – Fujikura Europe (www.fujikura.co.uk) launched a new bend-resistant fiber for FTTH applications. With a minimum bend radius of just 7.5mm, FutureGuide SR7.5 is one of the most flexible fibers in the world.

Available in a MageTsuyo SR7.5 patch cord, the fiber is flexible and highly durable: when twisted or bent, it returns to its original condition without any deformation or marking on the sheath. With the ability to be manipulated in the same way as electrical or telephone cable, the fiber can be used to deliver high-bandwidth communications directly into the home or office environment. The qualities of this fiber have also allowed Fujikura to develop

smaller, more space-efficient closures, including connector plugs and sockets.

OFS Launches Buried Fiber System

From BBP Wires

BARCELONA – The Access ADVANTAGE Slim Line, a buried fiber system optimized for the European FTTH market, was introduced by OFS (www.ofsoptics.com) last month. The system includes:

- Full-spectrum AllWave ZWP fiber;
- Full-spectrum splitters;
- Bend-optimized AllWave FLEX jumpers and fanouts;
- High-strength, kink-resistant, low-friction Slim Line ducts, which contribute to fast and easy installation performance;
- Manholes and joint closures that are easy to handle;
- A range of installation-optimized cables that are easily strippable with low friction and hard surfaces to enable "one person installation" at the last drop; and
- Pre-connectorized options, including drop cables and fiber panels, as well as racks and bend resistant patch cables.

"FTTH Made Easy" from Telco Systems and AFL Telecommunications

From BBP Wires

FOXBORO, MA – Telco Systems (www.telco.com) has teamed up with AFL Telecommunications (www.aftel.com) to create a turnkey solution for Active Ethernet fiber to the home. "Fiber Made Easy" provides end-to-end system integration as well as consulting services and solutions.

"With VoIP and IPTV continuing to grow in popularity, carriers are being challenged to find cost-effective solutions

to deliver carrier-class triple-play services to their consumer and enterprise customers and fiber is the key enabling media to support the higher bandwidth and new services," says Steven Curtis, senior vice president of sales at Telco Systems.

While Active Ethernet has become a more common FTTH architecture over the past year, designing a fiber-based network still requires expert advice about subjects including fiber distribution,

indoor and outdoor enclosures, splice and test equipment, cabling, headend solutions and subscriber equipment. To help developers determine the best solution, AFL's FTTH Made Easy Business Modeling Tool includes a modeling engine for calculating return on investment in PON and point-to-point active Ethernet. The tool also supports phased market rollouts and a wide range of user-definable inputs.

SMC Introduces New Low-Cost Metro Edge Switch

From BBP Wires

IRVINE, CA – SMC Networks (www.smc.com) has apparently set a new, low price point for fiber-to-fiber metro edge switches. Metro edge switches manage traffic that is moving from a local access

network to a backbone network – in this case, from the FTTH network to a metro fiber ring. SMC's new SMC7824M/FSW switch comes in at \$200 a port for nearly 13 Gbps. SMC says the single-chip ar-

chitecture enables the switch to handle as many as four gigabit uplinks economically, making it suitable for fiber-to-the-home networks providing high-definition TV and other demanding applications.

NEC Develops Compact Two-Way Transceivers

From BBP Wires

TOKYO – In recent years, as demand for FTTx equipment has grown, the number of optical transceivers in access equipment has also increased dramatically. A typical FTTx application today might require as many transceivers as there are subscribers. Customers have

asked for smaller optical transceivers so the overall size of access equipment could be reduced. NEC (www.nec.com) has responded to this challenge with two new compact optical transceivers.

Using planar lightwave circuit technology, NEC has developed SFF and SFP

transceivers that allow two channels of fiber-optic transmission in a form factor traditionally reserved for single-channel transmission. The company says this development promises to contribute greatly to smaller-size and higher-density fiber-optic access equipment.

Motorola Partners with ECI Telecom

From BBP Wires

HORSHAM, PA – Motorola, Inc. (www.motorola.com) and ECI Telecom (www.ecitele.com) announced a new strategic relationship between ECI's IP DSLAM portfolio and Motorola's fiber-to-the-node (FTTN) and fiber-to-the-premises (FTTP) solutions. The

multi-year agreement provides Motorola access to ECI's complete portfolio of access infrastructure products including outside plant and central office IP DSLAM solutions.

The new agreement gives Motorola the global rights to brand, mar-

ket, and sell ECI's portfolio of access infrastructure solutions. Motorola will be investing in integration of these platforms into its current Ultra-Broadband access portfolio and will have an exclusivity period for the North American market.

Corning to Reopen Optical Fiber Manufacturing Plant

From BBP Wires

CORNING, NY – In response to the rapid growth of the optical fiber market, Corning Incorporated (www.corning.com) announced plans to reopen a portion of its Concord, NC, optical fiber manufacturing facility. It will take ap-

proximately six to nine months to restart fiber manufacturing, and production will be paced to meet market demand.

"The optical fiber market has witnessed volume growth of greater than 15 percent in each of the last two years,"

said Eric S. Musser, vice president and general manager of Corning Optical Fiber. "Over 80 percent of worldwide fiber demand now comes from the access and metro segments, and we expect to see continued market growth."

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Literally hundreds of billions of capital investment dollars will be pouring into fiber-to-the-home and supporting markets over the next twenty five years.

Suppliers desiring to profit from this market must act quickly to refine strategies and alignments. Likewise, those considering deploying FTTH must make plans now – or miss early adopter benefits, and perhaps even lose customers to other FTTH providers.

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Dense Wavelength-Division Multiplexing Can Enable Advanced Broadband Services

From BBP Wires

SANTA CLARA, CA – Today's fiber-to-the-home networks generally use a single wavelength of light to transmit data downstream and another wavelength to transmit data upstream. But sending

light pulses over many wavelengths at once (dense wavelength-division multiplexing) is catching on to increase bandwidth. Latest news on the push to DWDM: KDDI R&D Laboratories, a subsidiary of Japanese service provider

KDDI (www.kddi.com), successfully concluded lab trial testing of DWDM technology from Novera Optics (www.noveraoptics.com). The test was a feasibility study for use with advanced next-generation products.

Wave7 Optics Receives Second Patent On RF Return

From BBP Wires

ATLANTA – Wave7 Optics (www.wave7optics.com) announced issuance of a second US patent for its fiber-to-the-home analog return solution. Support of RF return allows FTTH operators to use cable set-top boxes, enabling them to take advantage of the economies of scale and the mature applications developed for cable television. The patent,

as well as other RF return patents and applications by Wave7 Optics, helps protect the company's standards-based Trident7 and original Last Mile Link FTTH systems.

While Wave7 Optics supports the newer IPTV protocol, traditional RF broadcast remains of key strategic importance due to the immense number of RF televisions in the market today.

Most of Wave7 Optics' customers still send at least some of their video programming by RF, and Wave7's technology allows them to offer the same features that cable TV operators offer, including pay-per-view, video-on-demand, high definition, switched digital video, advertising insertion, caller ID on the TV, picture-in-picture and digital video recording capability.

Tenvera Announces Single Mode Fiber Pre-Terminated on Both Ends

From BBP Wires

FRANKLIN, TN – Tenvera (www.tenvera.com) unveiled a new product, single mode fiber pre-terminated on both ends, to facilitate connecting consumer electronics inside the customer

premises. Tenvera's patent-pending technology delivers single mode fiber that is terminated on both ends, APC or UPC, using SC connectors. The reel is pre-terminated in a clean lab and any dB loss is posted. The product eliminates expen-

sive fusion splicing, OTDR's, and signal loss. Pre-terminated fiber ferrule is blown to its destination and snapped into the SC connector. Any excess fiber is kept on the reel and placed on a mandrel within a standard distribution box.

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