

Deployments This Month: Clarksville, TN, Votes 72% for FTTH

By Masha Zager, Telecommunications Editor

Citizens of Clarksville, Tennessee, voted 72-28 percent in a referendum this month to allow the city utility to build a fiber optic network. Publicly owned fiber-to-the-home is under active review by a number of other municipalities across the country. In **Wilson, North Carolina**, the City Council is considering a \$28 million plan to build a city-wide FTTH network, which would be the first municipal network in the state. In **Danville, Virginia**, the City Council is considering whether to extend the municipal fiber system, which currently serves schools and government offices, to local businesses and ultimately to homes as well. The **Monticello, Minnesota** City Council is reviewing a feasibility report and a public-private task force's recommendation to build a FTTH network.

The city of **Palo Alto, California** took a major step forward with its FTTH project in October when it issued a request for proposals for an ultra-broadband network. While Palo Alto's RFP is technology neutral, it requires minimum symmetrical bandwidth of

100 Mbps for each end-user data connection, in addition to voice services and video services that include high-definition television and video on demand – requirements that can be met only by a fiber-to-the-premises solution.

The city of **Bellevue, Iowa**, is building a FTTH network using the Trident7 platform from **Wave7 Optics** (www.wave7optics.com). The new network replaces the city's existing cable TV system, and will offer 200 channels – including HDTV delivered via IPTV – as well as high-speed Internet, to 1,500 homes and business-class connections to local commercial premises. Telephone service will be added in the future.

Crawfordsville Electric Light & Power, a community-owned electric utility in Crawfordsville, Indiana, is also using the Trident platform for a new municipal network slated to begin service in January 2007. The company has 10,000 residential, commercial and industrial customers.

St. Olaf College, a private college in Northfield, Minnesota, is expanding its fiber optic access network using **Allop-**

tic's GePON solution (www.alloptic.com), in order to serve both the campus and the Northfield business community.

The municipal **iProvo** (www.iprovo.com) FTTH system in Provo, Utah, is now reported to have 7,700 subscribers – more than twice as many as it had a year ago, but still falling short of the city's original projection of 10,000 subscribers by the end of 2005.

Verizon (www.verizon.com) continued its drive to expand its FTTH footprint, bringing high-speed Internet services to parts of the Bronx and Queens in New York City, as well as selected communities in Massachusetts, western Pennsylvania and Washington State. The company also launched FiOS TV services in several communities in New York, Florida and Massachusetts. The company's rollout of FiOS television services is slower than its rollout of Internet services because it is required to obtain local video franchises in many states. In the last month, it obtained video franchises from close to 50 localities where it plans to offer FiOS TV in the near future.

International Deployment News

In **Puerto Vallarta, Mexico**, the El Tamarindo Golf Resort and Spa has deployed a GePON network from Alloptic to provide voice, data, video, building automation and security services throughout the resort. Alloptic scored another Latin American GePON win in Venezuela, where **Italvision XXI** selected it for a 2,000-home development in the city of Maracay. The development, Base Sucre, is the first phase of multi-phase project that will bring FTTH technology and broadband services to 500,000 residents.

Denmark, a fiber-to-the-home pio-

neer and the country with the highest rate of broadband subscribers in the world, will be getting two new FTTH systems. In the north, **HEF Bredband** is building a **Cisco** (www.cisco.com) network to serve 80,000 business and residential customers with up to 100 Mbps per customer. The open-access network will support multiple content providers, and customers will be able to access all services – voice, video and Internet – using the TV remote control. In the central part of the country, **EnergiMidt** is building the first GPON system in Europe, and expects to have 25,000 IPTV

subscribers by 2009. EnergiMidt is using the GPON solution from **Siemens** (www.siemens.com).

Not only did the City of Amsterdam begin construction of its fiber-to-the-home network last month (see article in the September issue of Broadband Properties), but the Dutch social housing association **Portaal** is starting the second phase of its FTTH project. Portaal's project, which will reach 55,000 homes in eight cities, will be one of the largest open-access networks in Europe. It is provisioned by **PacketFront** (www.packetfront.com).

International Deployment News cont...

NetCologne (www.netcologne.de), a municipal network in Germany, is starting to connect Cologne residents to its new FTTH network, which offers broadband speeds up to 100 Mbps. NetCologne, a competitive provider, had previously leased DSL lines from incumbent Deutsche Telekom, but will now be able to provide a truly competitive offering.

Link3 Technologies (www.link3.net), a data services provider in Bangladesh, is building a new FTTP network in the **Dhaka** Metropolitan City area, using Wave7 Optics' Trident7 platform. Link3 will bring Internet access to residential customers before the end of this year and move to a full-fledged triple play offering in mid-2007. By the end of 2008, Link3 plans to add business subscribers.

Chunghwa Telecom in Taiwan reported that it added 53,700 new FTTB subscribers in the third quarter of 2006.

The Australian state of Queensland announced a plan to build a municipal FTTH network in the city of **Brisbane**. The state government reportedly will issue a request for expressions of interest from private companies next month.

Alloptic Reveals Details of 10G EPON Product

From BBP Wires

LAS VEGAS – Even before the industry has fully absorbed the impact of Gbps-speed products, Alloptic (www.alloptic.com) announced the details of its 10 Gbps-capable Ethernet-based Passive Optical Network (10G EPON) system.

The Edge 10, which supports both 10G EPON and IEEE 802.3ah Ethernet in the First Mile, will begin shipping in mid-2007.

According to Alloptic, the Edge 10 will let providers deliver high densities

of Fast Ethernet and fractional Gigabit Ethernet services for business applications, while supporting multiple simultaneous streams of high-definition time-shifted IPTV, which will be crucial for future residential deployments.

Wave7 Announces Management Tools

From BBP Wires

ATLANTA – FTTH supplier Wave7 Optics (www.wave7optics.com) released the W7 Management Suite, an element management system supporting its Trident7 Optical Access Platform EPON/GPON product line. The suite gives Operations, Administration, Maintenance and Provisioning support for services including POTS and VOIP telephony, data services and RF or IP video.

The suite allows flow-through service provisioning of Wave7 Optics equipment, as well as video head-end controllers and voice switches, meaning that subscriber account number and address information flow automatically from the billing system to the customer premises devices. While it offers an optional tri-

ple-play order entry and accounts receivable package, it supports open billing system interfaces and interoperates with numerous third-party billing systems. A Web application provides subscriber service status views for customer service representatives, especially beneficial in "open access" networks with multiple service providers.

While the W7 Management Suite supports Wave7's newer, standards-based Trident platform, Wave7 also still sells its original, proprietary platform, Last Mile Link. To provision and manage Last Mile Link systems, Wave7 announced that it was partnering with Irish company Interactive Enterprise Limited (www.interactive-enterprise.com) to deliver Interactive Enterprise's solution, Conexon.

In a conversation with Broadband Properties at the FTTH Conference, Wave7 Optics also said that it would be rounding out its product line with Optical Network Terminals (customer-premises equipment) for multiple dwelling units, as well as a remote Optical Line Terminal with a 100-kilometer range that would make it easier for providers to serve rural areas with small pockets of subscribers. In addition, Wave7 will begin building home-networking support into its Optical Network Terminals, eliminating the need for an in-home device to support media delivery over cable or telephone wires.

The Business of Broadband FTTH

This month, even some giants like Siemens found they could not compete in the fast-moving but low-margin electronics end of the business.

TXP to Acquire Siemens' ONT Business

From BBP Wires

RICHARDSON, TX – TXP Corporation (www.texasprototypes.com), a provider of premanufacturing services for the electronics industry, has signed a nonbinding letter of intent to acquire the assets and intellectual property for Siemens' Optical Network Terminal (ONT) business. The transaction is expected to close in the fourth quarter of 2006. ONTs are the customer premises components of a passive optical network (PON) fiber-to-the-home solution.

Siemens' ONT portfolio contains BPON ONTs for single-family units, multi-dwelling units and small business units, as well as GPON ONTs for single-family units, Ethernet-only single-family units and small business units. Siemens will retain an undisclosed licensing fee and rights to market the technology internationally.

TXP also announced that it hired Siemens' 35-person ONT development team effective immediately, and renamed its photonics group to iphotonics.

AFL Telecommunications

Reselling Procera Networks Products

From BBP Wires

DUNCAN, SC and LOS GATOS, CA – AFL Telecommunications (www.afttele.com), a division of Fujikura Ltd. of Japan, will become a certified reseller of Procera Networks' (www.proceranetworks.com) products for fiber-to-the-home and fiber-to-the-premises network developers. AFL will now provide its customers with Procera's solutions, including fiber-powered triple-play applications for Internet broadband connectivity, voice over IP and streaming media.

AFL's portfolio of solutions for managing bandwidth, improving application performance, and rolling out broadband services will be enhanced by Procera's PacketLogic products, which are used to increase performance and quality of service (QoS) for premium applications and end users, and to mitigate threats to network security.

OMRON Acquires Optical Communications Components Business from NHK Spring

By Linda A. Schoener

TOKYO – OMRON Corporation (www.omron.com) has finalized its agreement to acquire NHK Spring's fiber-to-the-home optical coupler business. (Optical couplers are branching devices used in optical networks.) With this acquisition, OMRON aims to expand its business in the FTTH optical coupler market by leveraging the strong customer base of NHK Spring, which is a leading supplier of optical couplers in North America.

OMRON expects to realize significant synergies by combining NHK Spring's quartz optical waveguide technology with its own stacked polymer optical waveguide technology to create new high-performance, cost-competitive products. In addition, the acquisition is expected to stimulate sales of OMRON's optical switches and coarse wave-division multiplexing Mux/Demux Modules.

Emerson Introduces Fiber-to-the-Home Solution

From BBP Wires

LAS VEGAS – Emerson Network Power (www.emersonnetworkpower.com) launched its first foray into the FTTH industry by introducing its NetSpan FTTH Solutions. This outside-plant equipment supports the transi-

tion from copper to fiber networks through its compatibility with both types of network; NetSpan components can be used with an existing copper network, and then transitioned to fiber without incurring additional

infrastructure costs.

The NetSpan product line includes fiber distribution hubs (see FDH story this issue), optical plant enclosures and fiber distribution terminals and pedestals.

TelStrat Offers 2.4 Gbps GPON Solution

From BBP Wires

LAS VEGAS – Plano, Texas-based TelStrat introduced its new, fully-hardened 2.4 Gbps GPON additions to the company's Inteleflex platform. These GPON products enable service providers to offer not just voice, data and IPTV, but high-definition programming, video-on-demand and advanced interactive communications.

TelStrat's 2.4 GPON offerings include dual- and quad-port Optical Line Terminal (OLT) cards that fit into available slots in the Inteleflex chassis, as well as a family of modular, field-configurable Optical Network Terminals (ONTs, or customer-premises

equipment).

Because the new OLT cards are fully hardened, they are suitable for both central office and remote deployments. They are designed to be interoperable with third-party ONTs, which will let service providers benefit from continuous innovation and cost reductions in future ONT deployments. The GPON link natively carries both Ethernet and traditional time division multiplexed (TDM) traffic with strict quality of service. The backbone connection is at 10 Gbps, which supports centralized video on demand and other high-bandwidth applications.

The new ONTs, which are being manufactured by two companies under contract with Telstrat, accommodate expansion modules to support future services. Service providers can deploy traditional services when the system is installed, and then plug in additional interfaces in the field when they are needed, without interrupting service. Expansion modules for Home Phone-line Network Alliance 3 and T1/Async-T1 are available now, and the company expects to add more modules in the future, including MoCA support.

Volume production of the 2.4 GPON equipment will begin in January 2007.

New Technologies for Vendors

The increasing standardization of IEEE-based (GePON and P2P) and ITU-based technology (GPON) is stimulating large-scale integration of multiple functions on one chip. The day of the \$20 ONT is not far off, it seems.

Vitesse Announces FTTH Chipsets

From BBP Wires

SHANGHAI – Vitesse Semiconductor Corporation (www.vitesse.com) announced the general availability of its PON PRO family of physical media dependent (PMD) devices for BPON, EPON and GPON applications. To date, PON PRO products have been used in more than 20 Optical Line Termination (central-office) and Optical Network Terminal (customer-premises) modules, mainly in the Asia-Pacific FTTH market.

According to the company, the general availability of Vitesse's newest chipset is a key contributor to the widespread cus-

tomor acceptance of passive optical networking. The chipset lets designers create BPON, EPON and GPON networks with performance exceeding specifications for those standards.

Fulcrum Microsystems Debuts GPON Ethernet Switches

From BBP Wires

CALABASAS, CA – Fulcrum Microsystems (www.fulcrummicro.com) has introduced new Ethernet switch chips designed to be used in GPON Optical Line Terminas (OLTs, or central-office electronics). Equipment manufacturers are now migrating from single-port, first-generation OLT cards to multiport cards that provide higher user density and lower cost. To accommodate this transition and handle the increased density without sacrificing performance, switching must be embedded into the card.

Fulcrum's FocalPoint FM2103 and FM2104 switches answer this need. The FM2103 is configured for four-port OLT cards, with four 2.5 Gbps Ethernet ports for access connections and two 10 Gbps Ethernet XAUI ports for backbone links. The FM2104 is for eight-port OLT boards and features eight 2.5 Gbps Ethernet ports and two 10 Gbps Ethernet XAUI ports. Both chips make use of patented Fulcrum technology that achieves high data throughput with low latency (delay), while reducing power usage.

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