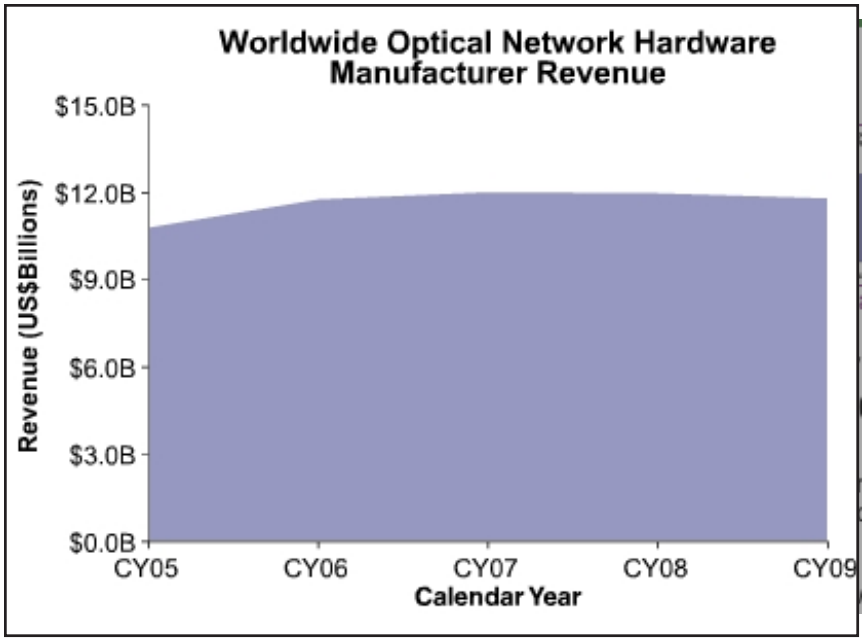
Optical Networks and WDM

Monthly Newsletter Covering Optical Networks, WDM & SONET Markets Worldwide

Vol. 10 No. 12 **December 2006**



Source: Infonetics Research

In This Issue...

CONTRACTS

Integra Telecom Selects Infinera for Northwest Network

Integra Telecom has selected Infinera to provide a new optical network for Integra's long-haul network in the western US. The investment in an Infinera Digital Optical Network marks the latest step in Integra's growth strategy aimed at delivering unrivaled customer service in its region.

Optical Networks and WDM Newsletter is published monthly by Information Gatekeepers Inc.
320 Washington Street, Brighton, Massachusetts 02135, USA. Fax: (617) 782-5735. Editorial telephone: (617) 782-5033.
Circulation telephone: (617) 782-5033. (800) 323-1088 (Outside MA)
Publisher/Editor: Dr. Paul Polishuk **Editor:** Dr. Hui Pan **Managing Editor:** Bev Wilson
Circulation Mgr: Jaime Perez **Subscription rates:** $695 per year U.S. and Canada; $745 per year elsewhere.
Discounts available for multiple subscriptions.

Based in Portland, Oregon, Integra Telecom is one of the largest competitive carriers in the US. In July, Integra acquired Electric Lightwave LLC. (ELI) to add ELI's 4,700-route-mile long-haul network to Integra's robust metropolitan area fiber networks spanning more than 2,200 route-miles. With a reputation for market-leading customer service, Integra provides services to enterprises and carriers in eight western states.

Integra is confident that Infinera's digital architecture will enable it to meet customer demand for fast-growing high-speed data services. Infinera's digital architecture and monolithic photonic integrated circuits are designed to provide very high reliability, which will help Integra sustain and enhance its reputation for quality and dependability, which has been confirmed by independent surveys in its major markets. With 100Gbps of bandwidth on every line card, Infinera also enables service delivery for new wavelengths or new services in days rather than in weeks or months.

"The Infinera solution enables Integra to reduce our service provisioning time dramatically while increasing the flexibility of our network through greater capabilities to switch and groom traffic into 10Gbps wavelengths," said Dave Bennett, senior vice president of network engineering of Integra Telecom. "We believe that the Infinera solution's advanced performance monitoring will allow us to enhance our response time and increase our network reliability. We found that the total cost of ownership for the Infinera solution was less than other optical transport competitors. The benefits of the Infinera solution include the cost of the actual equipment, together with operational benefits such as ease of installation, service provisioning and maintenance support services. Finally, Infinera provides us with the variety and flexibility we demand for future service offerings."

"We are thrilled to be supporting a fast-growing, forward-looking carrier like Integra Telecom, and we are confident that the Infinera Digital Optical Networking system will help them achieve their ambitious growth and service provisioning plans," said Infinera's cofounder and CEO, Jagdeep Singh.

With total capacity of 800Gbps and fast, simple service turn-up thanks to its digital architecture, the Infinera DTN is designed to meet the needs of high-bandwidth networks and fast-growing networks. The Infinera DTN is architected to combine high-capacity transport, fully reconfigurable switching, and GMPLS service intelligence in one platform.

Alcatel wins ROADM contract with P&TLuxembourg

Alcatel announced that it has signed a turnkey contract with P&TLuxembourg, the Grand Duchy's leading provider of postal and telecommunications services, to deploy a Trans-European Network using Alcatel's reconfigurable optical add-drop multiplex (ROADM)-powered solution. The project will enhance the high-speed optical connectivity and flexibility of P&TLuxembourg's network to transport large volumes of bandwidth-hungry broadband services between major European cities.

The Trans-European Network will span more than 3,000km linking Luxembourg, Amsterdam (the Netherlands), Brussels (Belgium), Frankfurt (Germany), and London (England), as well as Paris and Strasbourg (France). Its deployment will provide P&TLuxembourg with a leading-edge platform to efficiently support existing broadband services — including live TV streams, high-speed Internet access, e-shop, and mail — and further optimize the delivery of Ethernet-based services.

With the implementation of the Trans-European Network, P&TLuxembourg will be present at every important Internet exchange node in Europe. The first links will be operational before the end of 2006. The entire Trans-

European Network will progressively be operational at the beginning of 2007.

This enlarged European network will allow P&TLuxembourg and the Grand Duchy to compete with other European telecommunication centers and to offer attractive prices for bandwidth and Internet connectivity from and to Luxembourg. The network has been specifically designed to offer the maximum security and the highest quality of service by making sure that each connection has an independent redundant path.

Hargray Communications deploys Ciena's programmable DWDM solution

Ciena Corporation announced that Hargray Communications, an independent operating company (IOC) serving residential and business customers in areas of South Carolina and Georgia, has deployed the Company's CN 4200 FlexSelect Advanced Services Platform to upgrade its existing SONET network with multiservice, programmable DWDM transport and aggregation technology that dramatically increases its network capacity for VOD, HDTV, metro Ethernet, and other high-bandwidth services.

Based in Hilton Head, South Carolina, Hargray operates a technologically advanced network and offers a diverse portfolio of residential and business services, including local and long-distance voice, Ethernet LAN, wireless, high-speed data (DSL and cable modem), and cable TV over both IPTV and HFC networks. As its portfolio of services expands and customer traffic increases driven by its bundling strategy, the company's existing OC-48 SONET network is nearing its capacity limitations. Rather than spend the time, incur the expense, and impose potential community disruption of laying new fiber around its serving area, Hargray is addressing its fiber exhaustion situation using a flexible, metro DWDM solution from Ciena.

"The combination of our expanded services portfolio, more customer traffic and rising popularity of bandwidth-intensive services is driving us to implement a smart, long-term bandwidth strategy," said Gerry Grayson, vice president of engineering for Hargray. "As a leader in DWDM technology, Ciena stands out with its CN 4200 platform and FlexSelect Architecture vision by delivering scalable, pay-as-we-grow bandwidth and reducing the cost and complexity of our network by converging the transport of our various services onto a single platform."

Hargray deployed Ciena's CN 4200 in its main central offices this past summer, initially carrying some of the existing SONET traffic and now carrying video services over dedicated Gigabit Ethernet connections. As more capacity is needed, Hargray can simply add more Gigabit Ethernet connections regardless of the service type that needs to be transported.

"While DWDM technology has been a staple in large telecom networks for years, the rise of triple and quad play services, fiber-based access networks and heavy video traffic is creating a new market opportunity for metro DWDM as IOCs use it for fiber relief," said Mike Aquino, senior vice president of worldwide sales at Ciena. "The advanced transport capabilities of the CN 4200 provide unprecedented service flexibility and facilitate performance monitoring for all service types making it an ideal solution for service providers looking to create new bandwidth for advanced services without having to trench streets and lay new fiber."

Ciena's CN 4200, the flagship product of its FlexSelect Architecture, is the first multiservice transport and service aggregation platform capable of supporting the migration to packet networks using future-ready technology such as ITU G.709 Optical Transport Network (OTN) for service transparency, dynamic wavelength routing featuring a hybrid ROADM solution, and remote service provisioning and management capabilities. Using software-defined service ports, it is capable of on-demand support for any transport or service protocol —

including SONET/SDH, Ethernet, storage (Fibre Channel, FICON, ESCON), or video — at any speed on any available port.

NEC uses TPACK for 10Gbps

NEC has signed a long-term technology cooperation contract with TPACK for development of an advanced 10Gbps solution targeting the SpectralWave UN5000, NEC SpectralWave Multi-Service Platform.

The agreement was signed by Mr. Yamashita, general manager of the Optical Network Division at NEC, and Mr. Peter Viereck, president and CEO of TPACK, during a special ceremony at the Royal Danish Embassy in Tokyo, which was attended by both the Danish prime minister, Anders Fogh Rasmussen, and the Danish ambassador, Freddy Svane.

The agreement includes development and delivery of an advanced 10Gbps Ethernet-over-SONET/SDH solution for the SpectralWave UN5000 platform, which is extensively deployed in the worldwide market. New customer requirements and a desire for greater flexibility prompted NEC's decision to choose TPACK.

"NEC is committed to innovation in our products to better meet our customers' needs. The TPACK based solution will provide the flexibility to accommodate new requirements in the future," stated Mr. Mikio Yamashita, NEC.

"We are excited and honored to be selected by NEC for this project. It is a perfect example of how TPACK's value proposition can be exploited to provide rapid delivery of enhanced solutions with the flexibility to react to uncertain future demands," stated Peter Viereck, CEO TPACK.

Ericsson secures optical backbone network contract with Central China Power Grid

Ericsson has been selected by Central China Power Grid Co. Ltd. (CCPG) as the sole supplier for its East-West Corridor Optical Transmission Project. Ericsson will be providing 10G and 2.5G SDH equipment and related services.

Under the contract, Ericsson will supply its most advanced Optical MultiService transport and switching platforms to build an optical transmission backbone network for CCPG.

Upon completion of the network, the transmission capacity of Central and South Western provinces in China will be greatly enhanced, local electric resources utilized, and local telecommunications improved. Most significantly, it will help improve the supply of power to economically booming areas of Central and South Western China.

The East-West Corridor Optical Transmission Project is the most important one of CCPG's 11th Five-Year Plan. The optical transmission network to be constructed will pass through Hubei and Sichuan provinces and Chongqing Municipality, covering 55 stations and 1,500 kilometers. The entire project is due to be completed and put into operation by 2009.

Mats H Olsson, president, Ericsson Greater China, said, "The contract has further strengthened our long-term solid relationship with China's power industry. With our world leading optical solutions and experiences, we will be able to support CCPG in providing safe, secure and high-performance power services to over 380 million users across Central and South Western China."

Ericsson has so far supplied the SDH OMS3200 series, OMS1600 series, OMS1200 series, SMA series3/4, and PCM to China's major power companies, including China Southern Power Grid Corporation, State Grid Corporation of China, and its subsidiaries covering North and East China, as well as to numerous provincial and local power companies.

The contract highlights the benefits of the Marconi acquisition to Ericsson's customers, who value having a strategic partner and a provider of full-service broadband solutions including cutting-edge microwave and optical

transport networks, broadband access, and IMS.

ADVA Optical Networking provides first 10G Fibre Channel DWDM transport solution between universities of Stuttgart and Hohenheim

ADVA Optical Networking announced that its Fiber Service Platform (FSP) 2000 DWDM (Dense Wavelength Division Multiplexing) transport system has been successfully deployed in a leading-edge field demonstrator for the transmission of 10Gbps Fiber Channel (10G-FC) signals between the German universities of Stuttgart and Hohenheim.

The field demonstrator involved 10G-FC DWDM transmission using the FSP 2000 on a link between the High Performance Computing Center Stuttgart (HLRS), University of Stuttgart, and the University of Hohenheim in southwest Germany. Throughout the course of the testing, speeds of more than 10.1Gbps were achieved. The multilayer system was connected in part using 4G-FC local interfaces, which deliver 100 percent more bandwidth than 2Gbps links, but at only 10 to 20 percent higher cost.

Both 4Gbps or 10Gbps systems enable higher bandwidth levels with the potential to lower operating expense, and are critical for enterprises launching newer, bandwidth-intensive applications utilizing graphics and video.

Delivering the bandwidth and support of leading-edge protocols like 10G-FC, ADVA Optical Networking's WDM systems can support up to 80 channels ready for 10G-FC or other high-speed protocols. With a WDM solution in place, customers can connect any storage area network (SAN) fabric or high-performance computer over high-bandwidth metro and regional transparent optical networks. This enables applications such as grid computing, server and storage consolidation, disaster recovery, and business continuity. These applications allow universities and enterprises to deliver leading-edge datacenter performance, increased security, and reduced costs.

"We are connecting high-performance computing clusters over longer distances, enabling collaboration with other universities and us to build a flexible, scalable internal network for storage and other critical applications," explained Peter Haas, director of data and network management at HLRS. "We are now sharing scientific research and data around the world and have established grid computing architectures that allow us to share processing power across disparate sites for high-capacity scientific applications in a virtual setting. This network capability would not be possible without WDM as the foundation."

ADVA Optical Networking has supported the Universities of Stuttgart and Hohenheim since 2001 with an FSP 2000 link operating at 2.5Gbps. In 2004, ADVA Optical Networking demonstrated upgradeability of this link to 10GbE. Now, with this latest 10G-FC demonstrator, ADVA Optical Networking again showed its commitment to providing leading-edge functionality and interoperability for scientific, educational, and enterprise customers.

"With a WDM-enabled optical network now in place, these universities have a powerful tool for management of current resources and can plan for growth into the future," stated Dieter Will, VP business management enterprise for ADVA Optical Networking. "The drivers for high-performance WDM-based optical networks will not slow. The ability to simultaneously drive down costs and drastically improve performance with innovative optical transport technologies is exciting for organizations with growing storage and communications needs."

The ADVA Fiber Service Platform is a portfolio of Optical+Ethernet networking products designed specifically for the delivery of high-speed services and network infrastructure rollout. Their modular design and

flexible architecture options enable the most comprehensive and cost-effective solutions for customer premises, access, metro core, and regional deployment.

MIT Lincoln Laboratory and Naval Research Laboratory partner with Ciena to upgrade BoSSNET to 40G DWDM

Ciena Corporation announced that it is partnering with MIT Lincoln Laboratory and the Naval Research Laboratory (NRL) to upgrade the Boston South Network (BoSSNET) — an applications and network test bed for researching high-bandwidth (10s of Gbps per wavelength), long-reach (approx. 1,000km) all-optical transmissions — using the company's standards-based, all-optical DWDM technology.

Designed and managed by MIT Lincoln Laboratory in its role as a Federally Funded Research and Development Center for the US Department of Defense, BoSSNET is the research network for the lab's Advanced Networks Group, which architects, designs, and builds prototypes of next-generation optical, wireless, and satellite communication networks to address critical problems of national security, while also transferring those technical advances to commercial applications.

BoSSNET spans from Boston to Washington, D.C., with local metro area connections to Lincoln Lab, New York, and the D.C. area. Qwest Communications International Inc. has been a partner with this network since 1998 and provides fiber, facilities, and operations support.

BoSSNET will be upgraded with Ciena's CoreStream Agility Optical Transport System, which is capable of routing wavelength services up to speeds of 40Gbps for long-haul and ultra-long-haul network routes. The standards-based, all-optical DWDM platform simplifies networks by eliminating costly optical-electrical-optical (OEO) signal conversions and transceivers, and lowers ongoing operational costs by automating end-to-end service provisioning and management, inventory and resource tracking, and dynamic power management. BoSSNET will also leverage CoreStream's software-defined ROADM technology to enable automated wavelength activation and reconfiguration in capacity increments of 10G and 40G today, with a clear migration path to 100G. CoreStream is also the core optical transport and switching foundation of the Department of Defense's GIG-BE network, ensuring full compatibility for BoSSNET.

"Higher line side bit rates with fewer lambdas to manage not only lowers operational expenditures, but provides a path to 100G," said Eve Griliches, research manager at IDC. "Systems that cost-effectively deliver 40G today with a future-proof vision are well suited for the advanced networking needs of R&E environments."

A key partner in the BoSSNET upgrade is NRL, the corporate laboratory for the Navy and Marine Corps, which conducts a broad program of scientific research and advanced technology development. NRL is also a Principal Federal Agency Member of the Advanced Technology Demonstration Network (ATDnet), a high-performance networking test bed in the Washington, D.C., area.

"BoSSnet and ATDnet are unique all-optical assets where researchers can deploy next-generation technologies that enable dynamic peer-to-peer resource sharing between typical and high-end users," stated Dr. Henry Dardy, DoD/Navy senior technologist. "The networks provide researchers the capability to test low-latency, high-bandwidth streaming of data at 40G and 100G, providing the next steps toward the DoD's goal of scaling to terabit streams riding on a wavelength as technology progresses in future years."

BoSSNET plans include an initial upgrade of the network to 40G in early 2007, followed by an aggressive deployment schedule to the rest of the network. Once the network is fully upgraded, MIT Lincoln Laboratory, NRL,

and Ciena will begin planning the migration to 100G.

"As Ethernet increasingly becomes the foundation for high-capacity networks, a highly resilient core optical network scalable to beyond 100Gbps per channel will be critical to accommodate the growth in bandwidth-intensive applications carried across BoSSNET and other advanced networks," said Steve Alexander, chief technology officer for Ciena. "To maximize BoSSNET's capacity and operational efficiency, CoreStream delivers an open standards line system with 40G capabilities and a path to 100G, allowing operators to increase capacity without forklift upgrades of proprietary technology, additional network elements or costly optical-to-electronic conversions."

Beijing Power selects ECI Telecom to upgrade its communications system for 2008 Olympics

ECI Telecom announced that Beijing Power has chosen ECI to upgrade its optical communications network in preparation for the 2008 Olympics. ECI's proven track record of supplying highly reliable solutions for power companies, both in China and around the world, helped ECI win this competitive bid. This follows another 2008 Olympics-related contract that was awarded to ECI earlier this year by Beijing Subways to upgrade its communications system.

In preparation for the Olympics, Beijing Power is building new power stations, connecting multiple Olympics sites and upgrading its current communications infrastructure. ECI's XDM optical solution will be used to expand this network, providing Beijing Power with additional bandwidth capacity to handle peak demand during the Olympic Games. This highly reliable and scalable network will be used for internal communications and for data communications in order to monitor the power stations and generators. The network will be managed by ECI's LightSoft network management system, enabling Beijing Power to easily provision and control new services.

"As hosts to the world's most important sporting event, we can't afford to take risks with our communications infrastructure," said Mr. Liu Run Sheng, director of Beijing Power's Dispatching Center. "Of all the companies we evaluated, ECI offered the most robust and reliable solution. Moreover, ECI is well-established in China and came to us with excellent references."

"We're proud that our optical solution was once again chosen by a major utility company in China for this high profile event," said Aviel Tenenbaum, president of ECI Telecom's Asia Pacific Regional Business Unit. "This flexible solution gives Beijing Power the ability to support the huge bandwidth requirements for the 2008 Olympics, ensuring that their critical communications run reliably."

SUBMARINE

Local CLSs now open to foreign submarine cables

The DoT has ordered that cable landing stations of Reliance Communications, Bharti, BSNL, and VSNL should be opened for access to international submarine cables that come into India. This will allow all players a fair and transparent business space, and help to reduce bandwidth rates. The access will also be available to domestic companies that may enter the undersea cable field. The government has also announced that TRAI will be the authority that will control the access charges for international bandwidth in a fair and balanced manner. Several large telecom companies have been granted ILD licenses, and some others have applications pending.

The decision was taken after a written request to Communications and IT Minister Dayanidhi Maran, from Nipendra Mishra, chairman of TRAI, to set up procedures for infrastructure sharing.

FLAG Telecom to divest 15 percent to 20 percent equity to strategic and financial investors

Reliance Communications' subsidiary, FLAG Telecom, valued at $1 billion, will divest 15 percent to 20 percent equity stake to financial and strategic investors. The company will raise $200 million by issuing an international convertible bond. Reliance has purchased FLAG Telecom's assets for $200 million.

FLAG Telecom started with selling bandwidth and then moved on to provide value-added services to global telecom companies. Presently, it is operating at break-even and will achieve profitability by 2007. However, sources stated that even though FLAG Telecom is controlling a 75,000km global cable system, investors have not been valuing its assets properly.

RCL plans to start global broadcast signals transmission using FLAG's fiber-optic networks

Reliance Communications (RCL) plans to start global broadcast signals and diverse media content delivery using FLAG Telecom's fiber-optic networks. FLAG is a wholly owned global subsidiary of RCL connecting main metros across four continents. FLAG Telecom runs the world's largest next-gen, IP-enabled connectivity network, including over 1,50,000km of fiber-optic cable systems connecting India, Europe, the US, the Asia-Pacific region, and the Middle East. The step is in accordance with the strategic decision by Reliance-ADAG to have fiber-optic networks as a cheaper practical alternative over conventional satellite-based global broadcast signal delivery.

Overseas media firms and broadcasters have tested the fiber-based network delivery successfully for events like Formula One Grand Prix and World Cup Football. RCL has not disclosed plans about transmission through top broadcast and media companies globally. However, senior officials at RCL and FLAG are negotiating with overseas broadcasters for the capacity and cost-linked advantages of fiber-optic networks, mainly for long-term international sporting events. The plan remarks noticeable rise in overseas filming with electronic content distribution over physical road and air transport. Despite this, the industry believes that satellite still remains the ideal transportation medium for short-term broadcasts.

FLAG Telecom to build FALCON undersea cable system in the Maldives

FLAG Telecom, an RCL subsidiary, and Wataniya Telecom have signed a contract to build an undersea cable communication system to provide international bandwidth to the Maldives. Wataniya Telecom is building the FALCON cable system's landing station at Male, Maldives. RCL expects this cable to route most of the international telecom traffic. FALCON will be Maldives' first undersea cable. So far, it has been internationally connected only via satellite bandwidth. The FALCON cable will connect Maldives to four continents to the FLAG network of 65,000km

Hibernia Atlantic launches its subsidiary company, Hibernia Metro, offering redundant transport services for the New York Metro Area

Hibernia Atlantic, a trans-Atlantic transport provider, announced the official launch of its subsidiary company, Hibernia Metro. Hibernia Metro offers a diverse, secure, and reliable menu of transport products to customers requiring a presence in and around New York City. Hibernia Metro's offerings are a direct response to the overwhelming success of Hibernia Atlantic's trans-Atlantic and terrestrial cable services.

"Launching a company like Hibernia Metro is a natural evolution for both Hibernia Atlantic and our customers," states Bjarni Thorvardarson, chief executive officer of Hibernia Atlantic. "We have found that many of

our clients also need diverse network connections within and around the New York metropolitan area. We are proud to offer our extensive services to this exciting market. Following our successful deployment in the New York City area, we will pursue other Hibernia Atlantic metro markets which includes Ashburn, Boston, Albany, Toronto, Montreal, Dublin, Manchester, London, Amsterdam, Frankfurt, Paris and Brussels."

"Hibernia Metro's suite of products and services include 10GbE Lan-Phy, Gigabit Ethernet in increments of 50Mbps, Fast Ethernet in increments of 10, 50 & 100Mbps, Ethernet circuits (Packet over SONET), and a full suite of SONET/SDH circuits," continues Joseph Hilt, vice president of sales and marketing for Hibernia Metro. "For the complete list of offerings and our network map, please visit the company's new, comprehensive Web site, www.hiberniametro.com."

Additionally, the Web site illustrates how Hibernia Metro works closely with its parent company, Hibernia Atlantic, to address network deployments that require a presence in the US and Canada and in key cities in Ireland, the UK, and Europe.

NEW PRODUCTS

ECI Telecom launches Carrier Ethernet capabilities for its flagship MSPP

ECI Telecom introduced a family of Carrier Ethernet line cards for its Multi-Service Provisioning Platform (MSPP) product line. These new, cost-effective modules enable operators to deliver a myriad of carrier-class Ethernet services and applications that include triple-play services, business VPNs, wholesale applications, and comprehensive solutions for mobile operators. Multiple carriers have already ordered the cards, which will be commercially available in early 2007.

This new offering, which is part of ECI's XDM platform, underscores ECI's continued product innovation in multiservice transport solutions. ECI is leveraging its success with NG SDH/SONET, allowing operators to rapidly introduce revenue-generating carrier-class Ethernet services. ECI was recently recognized by Gartner as a "Leader" in its Next-generation SDH Equipment Magic Quadrant.

"ECI's XDM product family has earned the reputation as a trustworthy SDH platform," said Jason Marcheck, principal analyst, Optical Infrastructure, for Current Analysis. "By incorporating Ethernet services enablers, that interface with the BroadGate access product line, ECI's XDM customers now benefit from the ability to gracefully transition their networks to offer important new Ethernet-based triple-play services, while maintaining support for lucrative legacy SDH service offerings."

ECI's new carrier-class Ethernet capabilities provide operators with quality-assured Ethernet services from access to core. The new cards deliver Carrier Ethernet services that address Layer 1 through eventually MPLS (Multi-Protocol Label Switching). Operators rely on MPLS to provide carrier-class Ethernet services with higher scalability, improved reliability, and improved manageability.

"As SDH/SONET networks are widely deployed, operators aim to leverage their existing infrastructure to respond to the strong demand for premium Ethernet services," said Eyal Shaked, executive vice president and general manager of ECI Telecom's Optical Networks Division. "We are enabling customers to easily offer these new services simply by installing ECI's data cards on their existing XDM platforms. This further strengthens our position in the MSPP market."

ECI Telecom enhances its multilayer network management system for optical, Ethernet and SONET/SDH

ECI Telecom announced a new feature set for its carrier-class network management system (NMS), LightSoft V3. LightSoft V3

provides a multidimensional approach to management, giving carriers the ability to view and administer their entire infrastructure of converged optical, Ethernet, and SONET/SDH networks. By managing multiple layers from a single system, LightSoft V3 enhances carriers' ability to easily and efficiently manage and optimize their networks, while reducing OpEx.

"With the enhanced LightSoft V3, ECI is making a leap in optical network management capabilities," said Eyal Shaked, executive vice president and general manager of ECI Telecom's Optical Networks Division. "By supporting "SDH-like" functionalities in the optical layer, LightSoft V3 simplifies the provisioning and day-to-day monitoring of optical services and makes such information as wavelength utilization and channel availability easily accessible to the network operator."

LightSoft V3 support of a Northbound interface allows for performance monitoring, provisioning, maintenance, and integration into standard market-leading operation support systems (OSS). In addition, the highly scalable LightSoft V3 supports 50 concurrent users, while the system works in high-availability clusters and manages thousands of network elements and hundreds of thousands of network paths. LightSoft can also manage other vendors' element management systems (EMS).

Optimized for ECI's XDM optical and MSPP platform, LightSoft provides full control over the entire network, limiting the amount of necessary deployed systems. Other solutions in the market are limited in that they manage EMS and require a separate system for each type of network like SDH, optical, or Ethernet.

LightSoft Version 3.0 will be commercially available in early 2007.

ECI Telecom expands optical platform with 10-Gigabit LAN transport over optical transport networks

ECI Telecom announced a standards-based solution for 10G LAN transport over DWDM. It enables superior functionality by adding Ethernet and IP over DWDM and optical transport networks (OTN) with full QoS support, without compromising either environment. Operators gain bandwidth performance for triple-play aggregation, business data services, and IP backbone connectivity with guaranteed quality of service.

ECI's new offering has been well received, with successful deployments in multiple networks including RCS & RDS (Romania), Bezeq (Israel), and additional carriers in Eastern Europe, India, and Korea. "We are experiencing a growing demand for 10G LAN over DWDM services, both for connecting our core IP routers and as a service for high profile business customers," said Michel Hivert, VP engineering and planning division of Bezeq. "ECI's solution enables us to offer new services today, and to seamlessly introduce up to 40G connectivity when necessary."

More and more carriers worldwide embrace OTNs as a universal infrastructure to carry next-generation Ethernet and IP services, as well as legacy SONET/SDH services, over high-capacity and resilient WDM networks. However, ITU-T has yet to standardize the mapping of 10Gbps LAN to Optical Transport Networks.

Compared to other solutions in the market, ECI's 10G LAN solution is unique in that it transparently maps full-rate 10G LAN signals to full OTN line rate, without compromising the Ethernet transmission by not overriding important bytes and without limiting the effective rate.

The 10G LAN transponder is another configuration provided by the XDM's unique universal base card that is used with the various platforms in the XDM family, targeting access, metro, and long-haul.

This unique card design enables in-field configuration to support any service both at the line side and client side, rendering the XDM easy to deploy, operate, and maintain.

The 10G LAN card is part of the XDM's comprehensive suite of next-generation WDM capabilities, including full OTN mapping and multiplexing, multidegree WSS ROADM, all-range reach from access to long-haul, and ease of operation, complemented by a state-of-the art wavelength management suite offered by the latest version (V3) of LightSoft Network Management System.

The new 10G LAN card has already been successfully tested for interoperability with leading core IP routers.

"10G LAN is already a widely used interface for Ethernet and IP equipment, and our solution uniquely provides full QoS support without any compromises for both Ethernet and DWDM/OTN," said Eyal Shaked, executive vice president and general manager of ECI Telecom's Optical Networks Division. "The market reaction to this new card exceeds our expectations, as seen in our shipping and intake records. It's another example of ECI's leadership in next-generation optical networks, giving our customers the edge they need to stay competitive."

BUSINESS

BT makes communications history with the transfer of first customer lines to its 21CN

BT made communications history with the transfer of the first customer lines to its 21st Century Network (21CN), the world's most advanced next-generation network. As planned, BT has started to move customers in the village of Wick, near Cardiff, to the next-generation infrastructure. The upgrade, which took place without the need for an engineer visit, new telephone, or a new telephone number, is part of the first phase of the national rollout of 21CN.

21CN will bring a range of benefits to businesses and consumers over years to come. New voice, data, broadband, and multimedia services will be delivered more quickly and cheaply than before, including faster broadband. 21CN will also give customers more control over the way they use their services. The migration of the first customers to 21CN is a landmark event in BT's next-generation network program. To reach this important milestone, BT has rebuilt around 10 percent of the UK's core national communications infrastructure, installed 21CN equipment at over 100 sites across the UK, and laid more than 2,300 kilometers of new fiber-optic cable in South Wales. BT has also invested more than 1,500 man-years in developing new IT systems to support the new network.

Yipes adds CFO

Yipes Enterprise Services Inc. (http://www.yipes.com) announced the appointment of Scott Bauer to the position of chief financial officer, and the addition of W. Brennan Carley to the company's board of directors. The additions of Bauer and Carley help round out Yipes' depth in operations and corporate governance, while reinforcing the company's overall commitment to strategic growth.

Bauer brings extensive experience in both the technology and finance arenas, having most recently served as vice president of finance at Oakland, California-based Ask Jeeves Inc. During his five-year tenure with the publicly held search portal, Bauer was responsible for worldwide external reporting, accounting, and related finance functions. He participated in multiple securities offerings and played a key role in approximately 15 acquisitions, ranging from $2 million to $500 million.

Sycamore Networks receives delisting warning from Nasdaq

Sycamore Networks Inc. announced that due to the delay in filing its Form 10-Q for the period ended October 28, 2006, it has received, as expected, a letter from the staff of the Nasdaq Stock Market indicating that the company's common stock is subject to delisting pursuant to Nasdaq Marketplace Rule 4310(c)(14). That rule requires the company to make on a timely

basis all filings with the Securities and Exchange Commission, as required by the Securities Exchange Act of 1934, as amended.

As previously announced, the company received a letter from the staff of the Nasdaq Stock Market on October 18, 2006, indicating that the company's common stock is subject to delisting pursuant to Nasdaq Marketplace Rule 4310(c)(14) due to the delay in the filing of its Form 10-K for the year ended July 31, 2006. Sycamore appealed the Nasdaq Staff's determination to a Nasdaq Listing Qualifications Panel, which automatically stayed the delisting of Sycamore common stock pending the panel's review and determination. Sycamore will address both SEC filing deficiencies related to the filing of its Form 10-K and Form 10-Q at its scheduled hearing before a Nasdaq Listing Qualifications Panel. Until the Panel issues a determination and the expiration of any exception granted by the Panel, Sycamore's common stock will continue to be traded on The Nasdaq Global Market.

As previously disclosed, Sycamore has delayed filing its Form 10-K and Form 10-Q due to an ongoing investigation being directed by the Audit Committee of its board of directors into the granting of stock options and related accounting. While the company is working diligently to complete the investigation and file its Form 10-K and Form 10-Q, there can be no assurance that the panel will grant the company's request for an exception that would allow the continued listing of the company's common stock on The Nasdaq Global Market.

NETWORKS

Pembina launches fiber network

Pembina Trails, a major school division in Winnipeg, Manitoba (Canada), announced the launch of the fastest, most powerful fiber-optic educational network in Canada.

The new "dark fiber" network consists of 44km (27.3 miles) of fiber-optic cable, providing virtually unlimited bandwidth, and the introduction of VoIP over this network has the potential to provide savings of some $200,000 per year.

Students now have access to information at a speed 850 times faster than at home with DSL or cable Internet service, and the potential to link with other fiber-optic networks at libraries and universities around the world. Robust security features are integrated, and the entire network is maintained in-house.

"There is no limit to what this system can provide," said Don Reece, director of information technology for Pembina Trails. "With fiber linking us to global information portals, like the Manitoba Research Network and CANet3, we will be truly virtual, providing our students and staff with ultra fast pathways to educational resources, second-to-none in the world."

Interoute extends Ethernet

Interoute, owner of Europe's most advanced next-generation voice and data network, announced the extension of its services in Dubai, delivering managed Ethernet for customer sites in Dubai linking the thriving UAE business hub with Europe and America. Building on its links with du and Dubai Holding — following the investment of over EUR120m in 2005 — Interoute is the only company to offer true Layer 2 Ethernet services from major European and American cities to numerous free zones in Dubai.

Through its close relationship with Dubai Holding and du, Interoute has formed a range of partnerships in Dubai's free zones to help international organizations make the most of their presence there.

Interoute's Ethernet technology, which supports bandwidths from 2Mbps to 10Gbps, delivers a large data transfer and wide area networking capacity; this facilitates fast and efficient information sharing and radically reduces interface costs. Interoute offers a true Layer 2 Ethernet service, which is simpler and

cheaper than an IP VPN and allows customers to retain control of their CPE routers.

Gareth Williams, president of global markets at Interoute, said, "The pioneering partnerships we have made in Dubai have elevated us head and shoulders above the competition.

We are the only carrier capable of delivering a quality Ethernet service now linking the region to Europe and the US. Our portfolio of Ethernet services, including 10GIGE, extends the simplicity and familiarity of the local area network out into the wide area network, removing legacy technology without the huge costs of a complete system overhaul."

MARKET INTELLIGENCE

Optical sales increase

Worldwide optical network hardware revenue increased 4 percent between the second and third quarters of 2006, reaching $3.1 billion in 3Q06, according to Infonetics Research's latest Optical Network Hardware report.

The market is forecast to grow 9 percent between 2005 and 2006, and will reach $11.8 billion in 2009.

"The optical hardware market has stabilized, with a likely pattern of slow growth in WDM and a slow decline in SONET/SDH after 2007. The overall market will continue steady growth, driven by the ever- increasing bandwidth use by consumers and businesses for video applications, mobile traffic, broadband, and IPTV," said Infonetics Research's cofounder, Michael Howard.

CIR releases report on the market for 100-GigE and other next-generation networks

With the recent endorsement of 100Gbps Ethernet by an IEEE Study Group, new opportunities for modules and component firms are about to appear. To help clients better understand and capitalize on these opportunities, CIR, a leading industry analysis firm, announced the release of a new report titled "Beyond 10 & 40Gbps; Next-generation Ethernet and Sonet/SDH."

The report examines the evolution of networking beyond 10Gbps and 40Gbps speeds and shows where the next big wave of high-speed network commercialization will hit. Additional details about the report, including a summary and outline, can be found on the firm's Web site at http://www.cir-inc.com.

CIR claims that development efforts geared towards moving beyond current line rates will impact the networking value chain much sooner than expected and in a number of different ways.

- Optical integration to revive — While optical integration rose and fell with the boom and bust of optical networking, it now seems essential to creating the cost-effective very high speed transceivers required for networks operating at above 40Gbps.

Firms such as Apogee and Infinera are already building integrated optical components for next-generation networks, and Intel seems likely to move in that direction, as well. CIR expects to see exotic new chips emerge that combine the functionality of lasers and amplifiers, receivers and mux/demux, and/or even laser arrays integrated with an optical routing device.

- Beyond SFP+ — These development efforts will also drive down the costs of available technologies.

Renewed interest in optical integration coupled with the new technology of silicon photonics will lead to even smaller and lower-cost 10Gbps transceivers.

Luxtera is already pioneering this approach. While there is currently considerable excitement in the industry about the XFP and SFP+ formats, these may not turn out to be the ultimate in 10Gbps modules, and these new technology directions could help 10-GigE become dominant in the server space.

- The MSAs circus never stops — CIR believes that the 100-GigE MSA process will be just as messy as the one for 10-GigE. Early 100-GigE MSAs may be derived from the XENPAK, IBPAK, or 300-pin MSAs for 10-GigE, but module manufacturers will soon be jockeying for market share with ever smaller MSAs and MSAs that are favored by the big equipment manufacturers, especially Cisco.

- The future of SONET/SDH? — While the networking world is now moving towards 100-GigE, there is little currently underway to take SONET/SDH standards beyond 40Gbps. The future of public networking may now lie in the ITU's much-touted OTN with SONET/SDH carried on a lambda. Or, it may lie in some carrier-class version of next-generation Ethernet. Whatever the outcome, the adoption of a 100Gbps Ethernet standard means that SONET/SDH and Ethernet are going their own way.

- Future-proofing for network managers — As the standards for 100-GigE begin to emerge, network managers will face new questions on how to build their network infrastructure for the future. Should enterprise networks shift to OM3 or make a rapid transition to SMF in the enterprise? Does it make sense to buy from vendors who are further down the path to 100-GigE Ethernet? Will proprietary high-speed networking products prove useful and economical in the medium-term future?

CIR's new report, "Beyond 10 & 40Gbps; Next-generation Ethernet and Sonet/SDH" includes an analysis of the opportunities and addressable markets for emerging markets for TDM, Ethernet, and WDM networks operating at above 40Gbps.

It covers both optical and electronic components including lasers, modulators, detectors, electronic and optical dispersion products, amplifiers, WDM components, MAC, PMD and PHY chips, and many other areas. The report also discusses the firms that are already making waves in this space and provides an assessment of the addressable market for these next-generation networks over the next decade.

Firms covered in this report include Apogee, Avago, Avanex, Bookham, Broadcom, Emcore, ExceLight, Finisar, Fujitsu, Infinera, Intel, JDSU, Hitachi Cable, Luxtera, MergeOptics, OCPI, NEC, Picolight, Opnext, and Vitesse, among others. Additional information is available at http://www.cir-inc.com.

OpVista touts ROADM rank

OpVista Inc., a provider of network capacity and modular reconfigurability at low first-cost, is now ranked as having the third-largest market share of reconfigurable optical add/drop multiplexers (ROADM) in the world, according to a new study by Infonetics Research.

The market research report can be found at www.infonetics.com. In the report for 3Q 2006, OpVista is reported to have a 10 percent share in the category, behind Cisco at 31 percent and Fujitsu at 27 percent. In North America, OpVista has a 14 percent share, while Cisco has 31 percent and Fujitsu has 32 percent.

In addition, the report finds that there is the beginning of a "stronger wave of WDM in the metro" area, setting up "the need for WDM ROADM switching as ring systems and the services they support mature; service providers are opting more for WDM systems to carry data packet traffic."

Michael Howard, principal analyst and cofounder of Infonetics Research, said, "It is evident that the legacy networking leaders such as Cisco and Fujitsu are seeing new competition coming up rapidly.

Service providers are trusting that ROADM technology is mature, and so are choosing specialist players such as OpVista who has shown good growth in the last two quarters."

Karl May, OpVista CEO, said, "We are pleased that the report confirms what we are

seeing in the market place. The rapid and growing acceptance of the OpVista solution is a resounding validation of our approach. We also agree with the significant finding in the report that service providers are actively planning to deploy Ethernet instead of SONET/SDH first in their access networks."

Other key findings in the report:

- Ethernet has become a prime driver in the purchase of next-generation equipment by carriers
- Indicators show that service providers "will increase their WDM spending and deploy ROADM enabled equipment over the next few years, a sign of overall confidence in WDM as the popular optical transport" choice
- WDM will "slowly displace SONET/SDH over the next 15-20 years."