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Radar Scope

Broadway Networks

Broadway Networks was founded to develop a platform for optical broadband access in the first mile. The company is developing a platform for broadband access and triple-play based on PON technologies. The company has received funding from Pond Ventures. www.broadwaynetworks.com

Terascala

Terascala was formed to “design new scalable storage appliances that balance the needs of Linux clusters from moderate sizes to the largest clusters being employed.”

The rapidly expanding use of Linux-based clusters is increasing the pressure on storage systems to match the advantages of computational clustering in costs, bandwidth, scalability, and data latency.

To meet this challenge, Terascala is developing storage appliance for Linux cluster. Flexible and scalable configuration options will provide the optimal blend of storage processing power, high-performance disks, low-latency networks, and operational manageability regardless of cluster size and application characteristics.

Larry Genovesi, founder & CEO (previously founder and CEO of Ammasso, president, CEO and CTO of Network Engines, and founder and president of New England Interconnection Devices)

Bill Elliott, co-founder & COO (previously founder and Chief Marketing

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Startup Profiles

Cohda Wireless

Cohda Wireless was founded in 2002 to develop municipal and public safety wireless technologies. Its products are based on technology originally developed within the Institute for Telecommunications Research (ITR) at the University of South Australia and commercialized through the University’s incubator, ITEK.

In January 2006, Cohda Wireless closed a Series A round of funding from Australian-based venture capitalists SciVentures Investments, Epicorp, and M-Group together with several individual investors. Cohda Wireless had previously been funded by research grants and seed capital from the SciVentures Pre-Seed Fund, the Epicorp Seed Fund and the University of South Australia’s commercialisation arm, ITEK.

Cohda Wireless is developing standards-compliant products and technology that overcome technical limitations inherent in existing and emerging IEEE wireless standards. Existing commercial Wi-Fi solutions are inadequate for mission-critical customers, as they severely limit the ability to cope with data transfer to vehicles moving at speed in dense urban environments. This is because the 802.11 standard was not

designed for mobility or outdoor deployments, especially not in cities where harsh multi-path is a major issue leading to device failure.

The 802.11a/g/n/j PHY layer is modulated using a technique known as OFDM which, when appropriately configured, is well suited to indoor communications. However, there are two failure modes of 802.11 radios designed for indoor use when taken outdoors: mobility and multi-path propagation. The 802.11 standard was designed for low delay spread reflections, compared with outdoor propagation where the delay spreads are an order of magnitude higher.

To overcome the Physical Layer limitations of the standard, systems integrators need to saturate mobile outdoor environments with 802.11 devices, thereby obliterating the economics behind city-wide deployments.

To solve this problem, Cohda has developed receiver-side PHY signal processing technology that overcomes

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both the long delay spread associated with outdoors and/or NLOS deployments, and mobility problems even when they occur simultaneously. The advanced 802.11 receiver designed by Cohda collects all of the energy pertaining to each OFDM symbol irrespective of radio channel dispersion; accounts for interference that may arise within and between OFDM symbols, and tracks variations in the radio environment as they occur throughout the duration of the packet.

The result is an increase of up to 10 dB in receiver sensitivity; an ability to provide coverage for 802.11 in long delay spread environments such as those encountered in municipal and public safety deployments; an ability to maintain links at speeds in excess of 200 mph in typically encountered Non-Line-Of-Sight conditions; an increase in reliable transmission range of 75%; increased coverage into black-spots as encountered in urban canyons; and increased robustness to interfering radio signals such as 802.11, 802.16 or any other inband transmitter.

Performance consistent with that obtained indoors is provided in harsh NLOS outdoor environments for speeds of 140mph or more. Deployment economics are significantly improved since saturating an area with LOS access points is no longer required. Cohda's technology doubles the range between communications nodes leading to a 4X reduction in the number of nodes required.

The Cohda Mobile-OFDM solution does not require service from expensive communications infrastructure such as base stations, towers, fibre optic and microwave links. A number of small low-cost radio devices can be fixed to street-based structures, such as bus stops, lights and buildings that

require power, but need no other direct connection for wireless access. Each device is also capable of connection into a larger fixed line network.

The solution empowers vendors of muni-wireless networking solutions with technology that drastically reduces the number of devices needed per square mile required to deliver robust broadband wireless in outdoor, non-LOS and high-speed mobile deployments. The solution enables muni-wireless and public safety system vendors to improve the economics of city-wide outdoor networks, while at the same time, increasing the mobility, robustness and range of their systems. Key features include true broadband connectivity at 200mph, less chance of signal dropouts, lower cost infrastructure deployment, and multi-layer secure encrypted communications.

Cohda ensures that connectivity is maintained even while traveling in hostile radio environments and, as a private network solution, susceptibility to congestion is reduced. Cohda's unique sensitivity technology enables processing of very weak signals, which significantly increases effective coverage area, Quality of Service and network reliability, as compared to conventional or emerging solutions. The solution supports up to 54 Mbps on uplink & downlink.

A number of successful field demonstrations in Australia generated excellent feedback and proved the product's commercial viability. The first product, Cohda Mobile-OFDM, is a high-speed, low-cost digital wireless mobile broadband network initially targeted at the U.S. public safety market. The technology is currently under development and will be formally unveiled in Q3'06.

Martin Suter, CEO (most recently VP of Business Development at Mesh-Networks)

Peter Harriss, COO (most recently managed the formation of several technology startups emanating from the University of South Australia)

Dr. Paul Alexander, founder & CTO (previously a researcher at the Centre for Wireless Communications at the National University of Singapore and at Southern Poro Communications of Sydney, Australia)

Paul Gray, Ph.D., VP of Engineering (most recently served as business area manager at TrellisWare)

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Imagine

Imagine Communications was founded in 2005 to develop a PersonalizedTV platform for broadband operators. The company has raised \$9.2 million in first round funding from Carmel Ventures and Columbia Capital. Series B funding is anticipated in mid-2007. Imagine has more than 25 employees, and has its headquarters in San Diego, with R&D and engineering in Israel.

Longstanding paradigms in the video industry such as broadcast delivery, scheduled viewing and fixed location are rapidly giving way to on-demand, personalization and mobility. The essence of PersonalizedTV is giving subscribers the content they want, when they want it. However, this consumer control and flexibility imposes new costs and complexities on network operators.

Imagine's third-generation statistical multiplexing technology for the MPEG-2 VOD market (SDTV and HDTV) and software-based infrastructure solutions enable tremendous bandwidth improvements, enhanced video quality, and customized service offerings such as targeted ads, personalized audio, and more.

The Quality On Demand Gateway ("QOD Gateway"), Imagine's initial product, incorporates this technology to "supercharge" VOD expansion with much greater streaming capacity and the potential for higher quality video. With its video analysis, quality measurement and indexing technique, combined with scalable, next-generation multiplexing technology, the QOD Gateway provides substantial benefits to broadband operators including 50%-100% more streams on existing network infrastructure, greatly enhanced video quality, and future PersonalizedTV applications such as targeted ads and personalized audio.

With the QOD Gateway, up to 15 Variable Bit Rate (VBR) VOD streams can share the same 256 QAM channel with equivalent quality relative to today's maximum of 10 Constant Bit Rate (CBR) VOD streams. Similarly, 3 HD-VOD VBR streams can occupy a 256 QAM channel vs. today's maximum of 2 HD-VOD CBR streams.

With future software releases, additional advanced video services (such as SDV) can be multiplexed through the same QOD Gateway, subject to a 40 Gbps maximum throughput for Imagine's 5RU (rack unit) product (over 14,000 SDTV streams or 3,500 HDTV streams), and a 100 Gbps maximum throughput for its 12RU product (over 36,000 MPEG-2 SDTV streams or 9,000 HDTV streams). This stream count density represents a 4-20 times rack space efficiency improvement factor versus competing solutions, according to the company.

By implementing its technology in software, Imagine is able to leverage powerful, carrier-grade, off-the-shelf hardware that is available from multiple suppliers. Imagine's software-based products leverage hardware such as the carrier-grade AdvancedTCA platform containing powerful packet processing cards, and uses standardized interfaces such as GbE and 10GbE for seamless plug and play deployment with the operator's headend infrastructure equipment.

Imagine's technology can be used in both a stored VOD (video on demand) and realtime (switched) environment. Diverse sources can feed the QOD Gateway including multiple VOD servers, live digital satellite or broadcast feeds, and ad servers. Fully compatible with HFC, FTTP and DSL networks, Imagine's technology operates with MPEG-2 video coding today, while supporting the MPEG-4 AVC standard in the future.

Standard definition VOD and HD-VOD streams can be mixed and matched within the same QAM channel. The QOD Gateway leverages a novel video analysis, quality measurement, and indexing technique that ensures the best video quality at any given bit rate. Imagine's approach to video processing and multiplexing adds negligible incremental consumer response delay (1/10 of a second) for trick modes in VOD and channel change times in switched digital video (SDV) and IPTV, compared to competitors' typical delays of 1-4 seconds.

As operators expand their streaming capacity, the QOD Gateway enables them to save 1/3 of the capital costs required for incremental QAM upconversion and modulation devices. Furthermore, with its efficient power utilization of less than 1 watt per QAM channel, the QOD Gateway saves up to 25% of operators' incremental pow-

er requirements, while also saving over 20% of incremental rack space.

Imagine argues that its technology is radically different from anything in the market. While RGB, Terayon and BigBand are in the same space, these companies use a traditional approach to transrating and statmuxing, according to Imagine. In contrast, Imagine's solution is based on breakthrough technologies with broad applicability to PersonalizedTV, and does not require custom hardware. Furthermore, Imagine is completely focused on digital video processing/multiplexing and facilitating the PersonalizedTV experience, and doesn't have other products like MPEG-2 decoders or RF (NTSC/QAM) products.

Imagine's initial product focuses on the MPEG-2 VOD market. Subsequent product releases will apply Imagine's core technology to Switched Digital Video (SDV), Ad Insertion, Network PVR (nPVR), Personalized Audio and IPTV, while adding various new features personalized to the individual subscriber. The core technology is also applicable to the TelcoTV/IPTV arena.

Imagine is in talks with many MSOs and expects to go into field trials with one or two MSOs this year. First shipments are anticipated by the beginning of next year and additional products will be released in 2007.

Jamie Howard, President and CEO (previously COO of BigBand Networks, co-founder of @Home Networks before being appointed as president and CEO of @Home Benelux, and president and CEO of Bazillion)

Ron Gutman, CTO and Co-Founder (previously director of customer solutions, system architect and R&D project manager at BigBand Networks and R&D project manager at Harmonic)

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Doron Segev, VP Engineering and Co-Founder (previously led the product and engineering development of video networking products for BigBand Networks, including the Switched Video and Video over IP product line solutions)

Marc Tayer, SVP Marketing and Business Development (previously VP global marketing and VP business development at GI/Motorola, co-founder and SVP business development at Aerocast, and then worked for Cablevision/Rainbow in the HDTV and new technology areas)

Doron Mick, VP Operations (previously the international business development, marketing and sales director at Rafael and held management and R&D/engineering positions at Harmonic including director of R&D/engineering and Co-GM Israeli operations)

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Movidis

Movidis was founded in 2001 to develop "high-performance, secure and power-efficient networking equipment for the OEM and enterprise markets." The company is privately funded, primarily from the principals. Movidis has 10 employees.

Movidis is focused on developing servers that deliver superior performance, security, and low-power consumption by leveraging a low power 16-core processor in contrast to today's x86-based servers. Using this new processor as its foundation, its products are flexible enough to address multiple needs, including network storage, web and e-commerce, and database server needs,

as well as other Linux-based applications.

Movidis initially focused on high-performance streaming-media servers that reduced the cost of VOD servers by more than 60%, according to the company, by utilizing a multi-processor architecture in a blade server. The latest rendition of its VOD server, the MMS2000 Streaming Media Server can support up to 1,000 MPEG2 video streams when running on the newly introduced Revolution x16, lowering the cost of VOD servers to less than \$10 per stream, which is claimed to be the lowest cost VOD server in existence. It can also be used with newer, more efficient codecs, at a proportional increase in the number of streams supported. The VSM VOD Service Manager controls the VOD server, subscribers, network bandwidth, and content, and provides the entire back end for a VOD system for IP or cable TV systems.

The recently introduced Revolution x16 Server provides a single architecture for high performance networked storage, secure Web transactions, databases and applications running in the datacenter or at the edge of the network. The Revolution is designed to perform more than one function, and offers market-leading performance, security and power-efficiency.

Instead of using an x86 architecture processor incumbent in most of servers, the Revolution uses the Cavium OCTEON CN3860, a 16-core, 64-bit MIPS processor, which can execute almost 20 billion instructions per second. The OCTEON includes integrated accelerators that perform encryption, compression, and TCP packet processing in hardware, making it incredibly secure and fast. For secure web server applications, the integrated security accelerators are capable of encrypting (in hardware, not software) at a rate of up to 4 Gbps.

Based on this processor, the Revolution offers a single architecture capable of economically performing the most common server functions – networked storage and web and database servers – with integrated security and drastically reduced power consumption. The Revolution consumes just 50 Watts (not including the hard drives), dramatically reducing operating power and cooling requirements, and saving almost \$300 per year (at \$0.15 per KWH), according to Movidis.

To help power the Revolution, Movidis surrounds the OCTEON with up to eight Gigabit Ethernet ports, up to 8 Gigabytes of DDR2 SDRAM, an 8-channel SATA/SAS RAID controller, and a 133 MHz/64-bit PCI-X expansion slot.

Typical servers connect processors to Ethernet controllers over a PCI bus, which is also shared with the disk drive controller. Since Revolution's Ethernet controllers are connected internally to the processor, the 8-channel SATA/SAS controller gets the 133MHZ, 64-bit PCI-X bus all to itself, so it can move data to and from the disk drives as fast as the drives can run. The platform supports up to 6 TB of storage in one 2U chassis.

The Revolution ships with Linux burned into the on-board flash, along with development tools and applications pre-installed and ready to run on the internal hard drives. Additionally, it's loaded with Apache, MySQL, and PHP/Perl/Python (the LAMP stack) to offer core programs for Web and e-commerce servers, as well as the widely accepted open source database software MySQL and PostgreSQL on the standard production build. The product ships with Debian Linux with SMP support.

Movidis has also introduced the x16 Network Application Platform (NAP), a board-level version of the Revolution

x16. The NAP is the company's first product for OEMs of high performance enterprise networking equipment. Based on the OCTEON CN3860, the NAP is a board level version of the Revolution that enables the fast development of high performance next-generation networking appliances.

Because the OCTEON integrates acceleration engines for TCP, QoS, encryption, and compression, most of the 9.6GHz of processing power can be freed up for high layer network applications like network security, intrusion detection, load balancing, WAN optimization, network storage, or network access control.

Additionally, the x16 NAP allows customers to fully exploit the power of the OCTEON with a 133 MHz/64-bit PCI-X bus, which is connected to an 8-port SATA II/SAS controller and a full speed expansion slot. Eight 10/100/1000 Ethernet ports are provided, along with four sockets for DDR2 registered DRAM DIMMs. All of these features, and more, fit onto an industry standard extended ATX PCB, allowing it to be installed in any standard 1U rack mount chassis.

Target applications include network storage, secure web servers, database servers, OEM network appliances, and video on demand servers. Revolution x16 Servers are available in 1U or 2U rack mount enclosures, with either four or eight SATA or SAS drives, for a maximum capacity of 6 Terabytes in a single 2U RAID system. The Revolution is sampling now; general availability is anticipated in several months with prices starting at \$2,995. The NAP is available now and will be available in OEM quantities starting below \$2,000.

Ken Goldsholl, CEO

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Porticus

Porticus Technology was founded to "drive the adoption of voice biometric authentication for secure and trusted remote communication." In February 2006, Porticus raised Series B funding, at an increase in valuation relative to previous financings, from new investor Us Unlimited, a Boston-area venture capital firm and Series A investors. The company is headquartered in Massachusetts and maintains R&D facilities in Europe and Asia.

Biometrics such as a fingerprint, iris scan, face or hand geometry can provide better security while automating the authentication process than any other method. However, current methods are often invasive and expensive. Voice is the most natural, least invasive and least expensive biometric to integrate, making it a viable option for identification security and remote authentication for wireless transactions.

Opus Research believes voice is a more accurate biometric than fingerprint, iris or facial scans. Furthermore, banks, credit card issuers, healthcare providers and insurance companies have stepped up their investigation and implementation of voice biometrics for phone-based caller authentication.

To capitalize on this trend, Porticus offers a biometric authentication framework for enabling trusted, secure communications, and claims to offer the only end-to-end solution to automate user authentication, independent of platform, protocol, network or spoken language. For chip and device manufacturers, Porticus offers a way to secure devices with a compact algorithm suitable for embedding. With both turnkey and custom solutions for the wired and wireless markets, Porticus delivers multi-factor user authentication

in highly regulated markets such as financial services, gaming and health care.

Porticus recently introduced its Versona family of voice authentication solutions for both Interactive Voice Response (IVR) systems and embedded options (wireless or semiconductor), delivering 'triple-factor' authentication, which combines something you know (your pass phrase), something you are (your voice), and something you have (a wireless handset/device or landline phone).

Versona is based on a patent-pending voice algorithm developed during the course of a decade and relies on the Physiological aspects (length, width and thickness) of the human vocal tract, making it less susceptible to background noise, recorded playback and intra-speaker variability (cold or flu).

For wireless handset and device manufacturers, wireless carriers and semiconductor makers, Versona delivers a software-only voice biometric that can leverage the power of and dependence on mobile form factors. Based upon an open API for native mobile operating systems (Symbian, J2ME and Windows Mobile), Versona Embedded provides advanced, hands-free security for wireless device, data and applications. Additionally, given its software-only implementation, Versona Embedded can be pre-loaded and shipped with a handset or downloaded (including updates) Over the Air (OTA) directly to device.

When used within call centers or IVR systems, Versona automates user authentication, thus eliminating the need for a time-consuming series of questions asked by call center agents to determine, verify and authenticate caller identity. Versona IVR is an open, modular platform using J2EE, XML and LDAP. Porticus also offers a web

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service API for easy integration into new or existing IVR or call center environments.

Porticus also offers Valocater, a Location-Aware service for mobile handsets and for jurisdictional compliance. With Valocater, call center operators and m-commerce applications will be alerted to the geographic location and identity of a wireless caller before a phone is answered or business transacted. Valocater optionally incorporates the same patent-pending voice biometric authentication algorithm found within Versona to provide 'triple-factor' authentication security.

Already approved by the Nevada Gaming Control Board and in use for wireless wagering in Nevada, Valocater uses GPS to accurately verify that a caller is located within Nevada's state borders, in accordance with the law, prior to a bet being placed, yet the solution also works on non-GPS capable handsets. Similar regulations apply to the lottery, which are specific to each state.

Initially designed and approved for licensed race and sports wagering in Nevada using wireless phones with GPS capability, Valocater's location verification system now insures jurisdictional compliance for gaming and government applications and uses both GPS and non-GPS capable handsets.

With a compact, software-only form factor, Valocater is portable to any GPS device that supports Java, and can either be pre-loaded onto a mobile phone or downloaded wirelessly Over The Air (OTA). Additional components to operate the full solution are installed at the book maker's server and configured to allow through only those calls that are validated, and Porticus hosts a Geographical Information server with user, enterprise and location information.

Porticus has a reseller partnership with **Metaphor Solutions**, a provider of packaged speech IVR applications that are configured and delivered over the Internet. The companies have integrated Versona into Metaphor's Plug & Play Speech IVR applications for enterprise call centers. Porticus also has a reseller partnership with **Harborlight Technologies**, which develops and hosts advanced self-service solutions for the financial services and banking industries. The collaboration will furnish the financial services industry and banks with Voice Compass, a self-service, IVR solution leveraging Versona. The Porticus voice authentication system has also been combined with the **IPBridges** VOIP gateway to deliver packaged solutions for carriers, enterprises and call centers/IVRs.

Germano Di Mambro, founder and CEO (previously co-founder and Managing Director of Galileo Advisors, co-founder, Director and EVP for InterTicket, VP of Business Development for Bremer Associates and Sales Executive for Leading Market Technologies)

Chris Shepler, Co-Founder, CFO and COO (previously acting CFO for Kodiak Group and a General Partner at Bainco International Investors)

Peter Jekel, VP of Engineering (previously worked at LogicaCMG and its predecessors for over 16 years, most recently as CTO, Executive Director of Systems and Software Engineering for North America)

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Tendril

Tendril was founded in 2004 to develop network operations platform soft-

ware for developing and deploying Wireless Sensor and Control Networks (WSCN). In April 2005, Tendril secured funds from Appian Venture Partners and Access Venture Partners. In September 2005, Tendril received a strategic investment from In-Q-Tel, an independent company established by the CIA, closing the round at \$1.75 million. The agreement includes a purchase of software licenses and an investment.

Tendril recently secured \$5.25 million in an oversubscribed Series B funding round led by Vista Ventures and joined by existing institutional investors Access Venture Partners, Appian Ventures and angel investors. Tendril has adequate capital to fully implement the next stage of its business plan, and is not seeking additional capital. Tendril currently has 14 employees and is slowly begin to expand its staff.

The low cost and high capability of wireless sensor and control networks opens the door to large scale sensory and control networks that were previously impractical or impossible. However, Tendril believes the power of these new sensor and control networks will not be fully realized if each developer has to develop his or her own set of common software services required to interact with a large, complex wireless mesh network.

Tendril's mission is "to accelerate wireless sensor and control network development by providing a rich range of developer productivity tools and software services." Tendril bridges the gap between wireless sensor and control networks and programmers by providing system-wide development tools, deployment engines, and professional services.

Tendril's software sits on top of a variety of low-power wireless sensor and control networks, including ZigBee, 802.15.4 and proprietary 802.15.4-

based networks, offering a distributed platform for monitoring, managing and integrating previously non-computerized activities related to buildings, factories, cities, crops, homes and other objects in the physical world.

Tendril's distributed platform allows OEMs to integrate wireless networking capabilities into their products in less than a week and provides system integrators with the ability to quickly add well-monitored WSCN to deployments in the field. Its technology accomplishes this by providing an integrated enterprise-side and node-side programming interface, along with associated network bridging software, for monitoring, managing, and integrating wireless sensor and control networks.

The Tendril Service Broker is a distributed run-time development platform that adds dramatically easier programming and greater control to wireless sensor networks (or ZigBee networks) by automatically orchestrating the actions of the network elements. The Tendril Service Broker handles functions that are common to all wireless sensor and control networks, freeing developers to focus on their applications.

The Tendril Service Broker, working in concert with the Tendril Device Object, handles functions such as recognizing and authenticating new sensors or controls on the network, cataloging their capabilities, assigning programmer property names to each capability, applying simple event-based rules to each property, issuing reliable commands to controls based on those events, and handling other "house-keeping" chores like multi-gateway routing (e.g. subnets), power management, authentication, and health and status heartbeats.

The information extracted from and deployed to the network frees the sys-

tem-wide application developer from having to understand the details of the underlying network and devices, allowing them to develop in higher-level languages, like Java, and focus on meaningful deployment issues. The Tendril Service Broker is compliant with numerous additional network platforms, including the EmberZNet 2.0 ZigBee-compliant network stack, EmberNet proprietary network platform and wireless chips from Chipcon, Crossbow, Freescale and Renesas.

Tendril also offers the Tendril Bridge for Building Automation, which is claimed to be the first multi-vendor wireless integration software driver developed using Tridium's NiagaraAX Framework. Tridium is an independent business entity of Honeywell and Niagara is an extensible platform that supports the rapid development of a wide range of Internet-enabled products and device-to-enterprise applications. With minimal software changes required, any building automation system using the NiagaraAX platform can control, supervise, alarm, schedule and manage ZigBee and other proprietary low-power wireless networks using the Tendril solution.

The "competition" currently comes from in-house programming teams, although this will likely change as the market grows. Tendril argues that its solution shaves a 9-18 month in-house programming effort down to less than a week. Airbee's ZNMS monitoring and management solution is a potential competitor; however, Tendril believes the Airbee product focuses on peer-to-peer Zigbee applications in contrast to Tendril's focus on centralized management, control and integration.

Tendril has undisclosed customers in a number of industries, such as industrial controls and building automation. A new and expanded version of the company's network operations

platform is expected to be released in Q1'07.

Adrian Tuck, CEO (previously interim CEO and EVP of Ember, and president of U.S. Operations and VP of Marketing for Soft-ex, a call accounting software manufacturer)

Tim Enwall, founder, Chairman and COO (founding CEO and previously VP, Research Area Director at Gartner)

Matt O'Kelley, COO (previously co-founder and periodic CEO of the Tsunami Consulting Group)

Ron Strich, SVP of Business Development (most recently SVP of Technology and Engineering for Invensys Controls)

Randy Willig, CTO and Chief Architect (previously Chief Scientist at SnowDroid, a startup focused on developing synthetic intelligence engines for robotic systems)

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VeriWave

VeriWave was founded in 2003 to provide performance analysis tools for Wireless LAN equipment and networks. In February 2004, VeriWave closed its first institutional round of funding from lead investor U.S. Venture Partners and joined by TL Ventures. Other investors include Woodside Fund and Alloy Partners. The company has roughly 50 employees.

There are a variety of approaches used to test 802.11 systems. Developers have been getting by with a variety of general RF and software tools, such as spectrum analyzers and listen-only protocol analyzers that do not test full conformance to the 802.11 protocol. Some wireless LAN test systems are based on off-the-shelf 802.11 chipsets driven

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by 3rd party traffic generators. These approaches are incapable of providing the accuracy, repeatability and scalability that are needed by today's network engineers and IT operations managers, and cannot be shared throughout the organization.

To address this problem, VeriWave has developed a new approach to the testing needs of large scale, corporate-grade Wireless LAN systems. The WaveTest Traffic Generator / Performance Analyzer, VeriWave's flagship product, is designed to test enterprise class WLAN equipment by providing multi-client emulation. It provides scalability, and offers accuracy, repeatability and automation to test the applications that WLAN users really care about, including security, client mobility and roaming, voice over WLAN, and enterprise class QoS delivery.

WaveTest is based on purpose-built hardware that exactly implements the IEEE 802.11 and IEEE 802.3 standards. An advanced scheduler and highly controllable MAC provide the ability to deliver thousands of fully interleaved client traffic streams to the system under test. Extremely accurate measurement of timing enables designers and QA personnel to examine in detail the statistics and events to characterize and troubleshoot their WLAN system. Because the system is fully integrated in hardware, with a precision radio, all tests are fully repeatable, including simulation of multiple client roaming events and contention.

A modular design of independent traffic generators / performance analyzers (WaveBlades) allows the test system to grow from testing a single access point (AP) to a complete network of tens of APs and multiple WLAN switches. The system can emulate anywhere from 1 to 500 individual clients

on each WaveBlade, while controlling individual security, power, rate, and payload settings per client. WaveTest can be used in the lab or in the field, by utilizing the same WaveBlades in the 9-slot WaveTest 90, or in the portable 2-slot WaveTest 20. Up to six WaveTest 90 chassis's can be daisy-chained in single test, emulating up to 27,000 clients.

The WaveTest system overcomes the limitations of existing test methods and is more accurate for testing all of the features and timing parameters specified in the 802.11 standard than any other alternative, according to the company. The WaveTest system offers complete 802.11 protocol analysis, which requires total interactive traffic control with timing precision for both correct and errored traffic. This allows the full testing of functional operation, timing parameters, and spatial features of the standard.

WaveTest can test the most complex Wi-Fi features, such as overlapping coverage areas, roaming, advanced switching architectures, and location-based services. It can be used in either an open-air environment to match the product use in the real world, or used in shielded environments. WaveTest allows the user to save an exact snapshot of a problem and bring it back to the development lab for extensive analysis. It also allows the easy development of real world tests by enabling real-time collision with frames based on header information, allowing the user to test the robustness of their equipment to specific interference scenarios.

In conjunction with WaveTest, VeriWave offers a series of specific test modules including IEEE 802.11.2 Standard WLAN Benchmarking Test, WLAN Roaming Test, and VoIP QoS Service Assurance Test. The WaveManager GUI offers interactive control of the various functions of the WaveT-

est system to generate, receive and analyze all types of traffic. VeriWave's Command Library (VCL) is a set of commands and actions that allows the users to exert complete control over the behavior of any aspect of the WaveTest system.

VeriWave will continue to enhance its testing applications to address emerging trends in wireless networking including WLAN mesh networks, voice and video transport over wireless networks, high speed WLAN (802.11n), and Wide Area wireless such as WiMax.

Industry analysis indicates that the available market for wireless network test products is well over \$500M. Competitors include home grown tools, Ixia and Azimuth. VeriWave argues that its solution is cost effective, easy to use, provides broad coverage of test cases, and reduces test time from hours to minutes. It is scalable to thousands of independent clients in a complex network encompassing tens of APs and WLAN controllers. Statefull and independent clients offer the ability to load the WLAN link to maximum capacity at line rate for a multitude of traffic types. Sophisticated traffic and client scheduling guarantees repeatable test sequences. And turnkey regression testing capabilities offer uninterrupted testing for long periods of time.

VeriWave addresses the needs of two main customer segments. WaveTest is designed for equipment manufacturers to accurately analyze the performance of their WLAN infrastructure products, and for carriers and enterprise users that want to make the right choice when selecting WLAN equipment for deployment in their networks.

Veriwave systems are being used by the leading vendors of WLAN infrastructure equipment, as well as by major carriers, service providers and government agencies. Customers

include Foundry Networks, Colubris Networks, Aruba Wireless, The Tolly Group, Network World and Network Test, Ortronics/Legrand, and Empowered Networks, among others.

Christopher DeMonico, CEO (previously VP of AT&T Microelectronics Group, VP of Lucent IC Group, and VP & Corporate Officer of PMC-Sierra)

Dr. Thomas Alexander, CTO (previously chief architect for Ethernet products for PMC-Sierra)

Tim Bennington-Davis, VP of Engineering (22+ years of experience in the development of high-performance test and measurement equipment. Most recently Director of OptoMechanical Engineering at In-Focus)

Eran Karoly, VP of Marketing (most recently VP of Marketing for Ixia)

Jim Kinnebrew, VP of Worldwide Sales (previously VP of Eastern Operations at Spirent and VP, Americas for Nortel)

Kellie VavRosky, CFO (previously Director of Finance at InFocus)

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WiNetworks

WiNetworks was formed in 2003 to develop wireless and digital video broadcast solutions. Cedar Fund provided seed funding. WiNetworks recently raised \$11M in venture funding, mostly from existing investors Cedar Fund, Columbia Capital and Rho Capital, with Evergreen entering as a new investor. The company has raised \$19.7M to date and breakeven is anticipated by the end of 2007. WiNetworks has 50 employees.

The satellite industry's growth rate has stalled as cable operators started winning back customers with all-inclusive monthly subscriptions that offer TV, broadband, and Internet phone service. However, with 25 million subscribers in the US (at an acquisition cost of \$1,000 per subscriber) the DBS operators own a \$25B leverageable asset base and are one of the largest nationwide holders of the last 100 ft. access real-estate (set-top-boxes, dish and wiring installation, coax plant).

In collaboration with the leading US DBS operators, WiNetworks has developed a solution that leverage this real-estate to build a low cost WiMAX network tightly coupled to the satellite infrastructure to enable an integrated triple-play and mobile offering. WiNetworks argues that it is the only company offering DBS operators a competitive solution for triple play services, which leverages the existing DBS network infrastructure.

WiNetworks is developing Wireless WiMAX (IEEE 802.16 d/e) and Digital Video Broadcast (DVB) solutions based on its patented Hybrid WiMAX DVB (HWDV) technology. WiMAX provides broadband connectivity over long distances and is particularly well-suited for Digital Broadcast Satellite (DBS) operators and Cable Operators that would like to expand their video content to mobile users. WiNetworks has filed for ten patents on its Hybrid WiMAX and DVB technology, and is a member of the WiMAX forum.

WiNetworks specializes in Wireless and Digital Video Broadcast solutions based on patented Hybrid WiMAX DVB (HWDV) technology. Its solutions transform one-way broadcast networks into full digital broadcast infrastructures, allowing operators to offer a bundle of "Triple Play" services – Internet access, telephony, video on demand, interactive TV services and mobile support.

The WiNetworks technology enables DBS and other broadcasting operators, including DVB-T, MMDS and One-way Cable, to build a complementary, low cost wireless network while leveraging their customer premise infrastructure (e.g., dish on the roof, existing coax wiring, etc.) to deploy a separate WiMAX network at a very low cost while offering a fully integrated triple-play bundle. Moreover, the WiNetworks architecture leverages the DBS multi-roof real estate access by using each receiver antenna as a repeater Pico station further expanding the range of each base station.

Patented Hybrid WiMAX Digital Video Broadcast (HWDV) technology extends the capabilities and reach of current infrastructure, at a fraction of the cost, enabling operators to increase market share, revenues and customer satisfaction, while maintaining and leveraging their existing installed base infrastructure. HWDV empowers operators to seamlessly integrate their existing network with a complementary WiMAX wireless network. HWDV seamlessly integrates with existing CPE, Set-top boxes, POP, NOC and Headend platforms, existing home wiring, billing systems, encryption and smart card platforms, streaming video & audio equipment, transport networks, and VoIP and IP systems.

WiMAX, WiNetworks' advanced Broadband Wireless Access (BWA) solution, features an advanced service suite and network control supporting thousands of users. WiMAX is a WiMAX-compliant Broadband Wireless Multimedia platform for broadband operators seeking to provide fast and cost-effective delivery of IP-based triple-play services to residential and SoHo customers over large geographical areas.

WiMAX comprises the WIN3000 and WiN4000 WiMAX-compliant base-stations, WiN2000 WiMAX-

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compliant CPEs and WIN1000 multi-service gateways. The WiNMS (WiNetworks NMS platform) provides end-to-end control over WiNetworks systems and service delivery.

WiNMAX systems feature low power operation, long distance coverage (up to 30 miles) using unique roof-to-roof hopping techniques, NLOS (non-Line-Of-Site) operation, multi-sector support (60 ° -360 °), a full-duplex broadband channel (up to 20Mbps net throughput for 3.5Mhz bandwidth), enhanced QoS for differentiated service support. The WiNMAX product family is available in 3.5Ghz and soon will be available in the unlicensed 5.8Ghz spectrum with other spectrum versions in development.

The WiN2000 WiMax CPE is an outdoor unit that provides WiMAX-based broadband wireless access to a range of indoor Multi Services Gateways via a single coax or CAT 5 cable that serves as the data, signaling and power feed. The WiN2100 WiMAX multi-tenant subscriber outdoor unit provides service for multiple dwellings. Each resident that requests DBS Triple-Play Services may self-install a WiN1100 Multi-Service Gateway by simply connecting to the existing MTU coax. The WiN2300 is a self-install CPE unit that is in development.

The WiN3000 is a high capacity, high-density modular WiMAX Base Station in an 8U high chassis that supports up to six sectors, with up to a total of 3,000 subscriber units per base station. The Base Station modules are hot swappable, and high availability can be provided through multiple redundancy schemes. The WiN4000 WiMAX Micro Base Station Unit can serve up to 500 subscriber units.

The WiN1000 family of triple-play multi-service gateways connect to WiN2000 CPEs to provide video, data and voice solutions in a single box for residential and SoHo end-users. WiN1000 systems offer full multi service provisioning service capabilities, including Ethernet switching, routing, VoIP, Broadband internet, On Demand (OD) Interactive TV functionalities and Video distribution. The WiN1000 integrates with any home wiring, including telephone lines, coax lines, power lines and wireless.

Featuring one E1/T1 service port and one Ethernet service port, the WiN1500 allows carriers and enterprises to connect TDM-based equipment and internal LAN over a unified WiMAX uplink without any voice quality degradation. Applications include cellular E1/T1 backhaul and branch and campus PBX/LAN connectivity.

WiNetworks is involved in dozens of field trials worldwide and is expecting to announce the first commercial deployment of the WiNMAX solution within the next couple of months.

Effi Atad, CEO and founder (Previously established, managed, sold and integrated New Media Communications (NMC) into Harmonic. Upon the acquisition, he was appointed VP Data and Satellites at Harmonic, as well as CEO of Harmonic Data Systems.)

Ofer Harpak, CTO (Previously established, managed, sold and successfully integrated NetWiz, a ETH switch vendor, into BATM and then served as CTO of BATM/Telco systems. He was also the founder of Vidyatel, an IP streaming video distribution systems company.)

Eitan Efron, VP of Marketing (previously VP, Product Marketing and board member of GalayOr, a photonic chip company, which was

recently acquired by MEMSCAP, and CEO and co-founder of KerenIX, an integrated switching and routing startup, and Director of Marketing & Product Management at Lightscape Networks, a division of ECI Telecom)

Doron Yannai, VP of Finance (previously VP Finance and CFO of NetFormx)

Daniel Bronholc, VP of R&D (previously R&D Project Manager at Alvarion)

Benjamin Finzi, President, Americas Operations (previously CEO of ISAT and co-founder and COO of EPIK Communications)

Gili Segal, VP of Operations (previously held operations positions at Avaya, Orckit, Thesis and Vbox)

Yoram Shkedi, VP of Business Development (previously a Technology Project Manager and Product Line Manager in the broadband modems unit at IBM and co-founded and managed the marketing and business development activities of Harmonic Data Systems which was acquired by Harmonic)

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Zenoss

Zenoss was co-founded by CEO Bill Karpovich and CTO Erik Dahl "to dramatically lower the cost and complexity of enterprise-grade systems management through its unique software product and the power of open

source.” Zenoss is developing open source IT operations management software. The company recently closed a \$4.8 million financing round, led by Boulder Ventures and Intersouth Partners and including individual investors and the Maryland Department of Business and Economic Development.

Automated systems monitoring is critical to organizations of all sizes to ensure reliable and secure IT operations. However, powerful monitoring tools are within reach for only the largest organizations because of their astronomical cost and complexity. Furthermore, companies will spend over \$8 billion on IT management software this year, yet Zenoss argues that most organizations still struggle to monitor and manage their growing IT infrastructures.

To address this problem, Zenoss has developed an open source solution that delivers enterprise-grade systems monitoring in an affordable, flexible and easy-to-use product. Development of the Zenoss software product has been underway since 2002 by Zenoss CTO Erik Dahl, the architect and lead developer of Zenoss. The software is available for download through the Zenoss open source community web site at www.zenoss.org.

Prior to beginning the Zenoss project, Erik Dahl played a key role in the development of a custom management application at a large ASP. This application was a replacement for a failed IBM Tivoli deployment and leveraged several open source projects.

The pain of both the big commercial suites and pulling together a complete solution using a cadre of open source components galvanized Dahl's thinking that the market needs a comprehensive enterprise-grade open source solution. Mid-market organizations in particular benefit because they previ-

ously could not afford this depth of functionality.

Zenoss is an enterprise IT monitoring application that provides the complete set of functionality needed to monitor an organization's entire IT infrastructure, including network devices, servers, applications and environmental controls in a single, integrated package. Unlike first-generation open source management utilities that were hard to use and lacked support, Zenoss's system is easy for administrators to set up and maintain.

Zenoss monitors networks & network devices, servers (Windows, Unix, Linux, Novell), software applications & services, TCP/IP ports & services (e.g. Web, Email, etc.), power supplies & environmental controls, custom applications, and any SNMP-capable device. Key features include automatic discovery, inventory & configuration tracking, availability monitoring, performance monitoring, centralized event management, analysis & alerting, flexible collection methods, and a secure web portal/console. Over time, Zenoss will expand to offer additional management functionality through further development and selective partnering with other open source projects.

Zenoss is written in Python using the Zope web application server, and integrates over 20 other open source products including: MySQL, RRDtool, Cricket, PySMP, Net-SNMP, sendpage and Twisted.

Compared to high-end commercial tools (e.g. IBM Tivoli, HP OpenView, BMC Patrol, CA) that dominate the market, Zenoss offers substantially lower cost (80% or more), a less complex package, faster deployment and return on investment, no vendor lock-in, and easy customization.

Compared to low-end commercial tools (e.g. What's Up, Big Brother),

Zenoss offers a complete enterprise monitoring solution (across infrastructure, across functions) that is scalable to thousands of devices. It is substantially easier to configure with automated discovery and template-based policies; provides advanced alerting features that prevent alarm fatigue, and is easy to customize.

Compared to other open source IT monitoring application, Zenoss provides a complete and integrated enterprise monitoring solution. It is easier to configure through web-based GUI, automated collection and template-based policies, and has corporate backing and commercial support options.

While other open source IT management providers typically release a watered-down version of their software as open source, Zenoss offers a complete solution that is available as an entirely free, downloadable product. Zenoss generates revenues by providing commercial-grade subscription-based support, training, partner programs, and other value-added offerings.

Zenoss has been used to monitor large-scale, production operations, including CableVision, since 2002.

Bill Karpovich, co-founder and CEO (previously SVP of Marketing at Port25 Solutions and a senior executive with USinternetworking)

Erik Dahl, co-founder and CTO (previously founder of Zentinel Systems, the predecessor to Zenoss, a senior architect at USinternetworking and director of product development for Meta4)

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Check out our sister publication
Semiconductor Times

People

3Com has appointed **Edgar Masri** as President and CEO to replace **Scott Murray** who submitted his resignation. **Bob Mao** was hired to serve as EVP of Corporate Development to manage 3Com's interests in Huawei-3Com (H-3C), its China-based joint venture with Huawei. 3Com will also begin negotiations with Huawei with the intent to increase 3Com's ownership stake in H-3C. 3Com currently owns 51% of H-3C and recently began consolidating H-3C's financial results. From 2000 to 2006, Masri was a general partner at Matrix Partners. Prior to Matrix, he 15 years at 3Com in a variety of senior management positions, including SVP & GM of the former Network Systems Business Unit and President of 3Com Ventures. Masri was also the COO of Redline Communications. Mao previously was president and CEO of Nortel's greater China operations. www.3com.com

Acme Packet has launched Canadian operations and has appointed **Rob Saloman** as GM, Canada. Saloman previously served as VP, Sales and Marketing at Nakina Systems, VP Metro Sales and Market Development at Nortel, VP Canadian Sales at Cambrian Systems, and held various senior sales and marketing roles with Newbridge and Mitel. Andy Ory, president and CEO. www.acme.packet.com

Acopia Networks, a provider of high-performance, enterprise file virtualization solutions, has appointed **Michael Connolly** as VP of US sales. Connolly previously served as VP of North American sales for Infoblox and spent 13 years in sales and sales management at EMC. He also has held senior sales management posi-

tions at Brocade and StorageNetworks. **Kirby Wadsworth** was named SVP of marketing and business development. Wadsworth previously worked at SVP of marketing and business development at Revivio, and co-founder and VP of marketing and business development at Storability. Both report to president and CEO, Christopher Lynch. www.acopia.com

AirTight Networks has appointed **Rico Bumbaca** as VP for the Asia-Pacific region. Rico previously held a similar position managing sales and business development in Asia-Pacific and Latin America at Check Point. David King, chairman and CEO. www.airtightnetworks.net

Arcadian Networks, a mission-critical, wireless, telecom carrier, has appointed **Robert Hearn** as national VP of sales and **John "Jake" Rasweiler** as VP of engineering and network operations. Hearn previously was an area VP for Nextel. Rasweiler previously worked at CellularOne, AT&T Wireless Services and most recently Sprint Nextel where he held positions including senior director RF engineering and market director. Gil Perez, CEO. www.arcadiannetworks.com

Argent Networks, a provider of real-time mediation, rating, billing and customer care solutions for prepaid and postpaid voice, data and content, has appointed **Larry Barker** as CEO replacing founding CEO Chris Jones. Barker previously was President, Chairman and CEO of Visual Networks and president of ADC Telecom. www.argentnetworks.com

Bivio Networks, a provider of high-performance network appliance platforms enabling the deployment of wire-speed, deep packet processing

applications, has appointed **James Brear** as VP of worldwide sales and support reporting to president and CEO Elan Amir. Brear previously was VP of worldwide sales for Tasman Networks and VP of worldwide sales at Force10 Networks. www.bivio.net

Bluegate (OTCBB: BGAT) has appointed **Andy Draper** as SVP of Business Development and Strategy. Bluegate is a provider of outsourced health care IT solutions. Draper previously worked at Cerner as director of Provider and National Health Strategies. www.bluegate.com

Bytemobile has appointed **Marty Smuin** as VP of Sales for the Americas reporting to Steve Livingston, EVP, Worldwide Sales and Marketing. Smuin previously was VP, GSM and Latin America, at Openwave and VP of Sales, Marketing and Business Development at ACCESS Systems. www.bytemobile.com

Cambia Security, a provider of security policy enforcement software, has appointed **Thomas McClinton** to its sales team, expanding its force to the Midwestern U.S. Additionally, the company announced new sales teams on the West Coast and in the Northeast market. McClinton previously was a regional sales manager at Network Intelligence. Jethro Felton, VP of sales and business development. www.cambia.com

CEYX has appointed **Salvatore (Sal) Benti** as EVP & COO and **Peter Ma** as VP of Engineering. Benti previously served as CEO of Malibu Networks. Ma previously held a number of director-level functions for HP including Director of New Business Development, Product Marketing and R&D for the OEM Industrial Printing Division. CEYX develops

software-enabled control systems for light-emitting devices. Carol Fuller, CEO and founder. www.ceyx.com

ClickShift, a provider of online advertising optimization solutions, has appointed **Eddie Smith** as VP of Marketing, **Jeff Goodman** as VP of Sales, and **John Pacholski** as VP of Finance. Smith previously was VP of Business Development with NexTag. Goodman most recently was VP of Worldwide Sales with WebSideStory. Pacholski previously performed contract CFO services for early stage venture backed startups. John Rodkin, CEO. www.clickshift.com

Cognitronics, a provider of call processing technology, has appointed **Michael Mitchell** as President and CEO, succeeding Brian Kelley. For five years leading up to Cognitronics' acquisition of the company in November 2005, Mitchell served as president and CEO of ThinkEngine Networks. Some of the largest conferencing corporations and tier 1 LECs in North America depend on the ThinkEngine VSR1000 media server for next generation conferencing and IVR services. www.cognitronics.com

Continuous Computing has promoted **Ron Pyles** to president. After joining the company in 2003 through the Trillium acquisition, Pyles started as VP of worldwide sales and progressed to become EVP of sales and marketing. Under his leadership, Continuous Computing's revenues nearly tripled in three years, from \$25 million in 2003 to over \$70 million in 2005. **Brian Wood** was promoted from director of marketing to VP of marketing and business development. Before joining Continuous Computing, Wood was director of marketing at Sorrento Networks. PJ Go, CEO, and co-founder. www.ccpu.com

Covad has named **Eric Weiss** as chief marketing officer reporting to president and CEO, Charles Hoffman. Weiss previously was an Executive in Residence for the telecom practice of the private equity firm Warburg Pincus, an extension of his role as SVP and GM of Mobile Applications for Aicent, a Warburg portfolio company. Before joining Aicent, he was VP of Macromedia's telecom solutions business and COO at ITXC. www.covad.com

DataFlux, a provider of data quality integration solutions, has appointed **Steve Balk** as VP of sales. Balk was formerly a regional VP of sales at Hummingbird and district sales manager at Ascential Software. Tony Fisher, president and CEO. www.dataflux.com

Digium has appointed **Bill Miller** as VP of Product Management and Marketing. Miller previously led voice product management at 3Com. He also held executive positions as VP of Marketing and Business Development for Andes Networks, VP of Fujitsu's Strategic Planning and Alliance Management group, as well as their Broadband Services group, and Associate VP of ATM for General DataComm. Mark Spencer, president. www.digium.com

ECI Telecom has appointed **Avi Cohen** as COO reporting to president and CEO, Rafi Maor. Cohen previously spent more than 11 years at KLA-Tencor including 7 years as president of KLA-Tencor Israel. Based in the US over the past 4 years, his most recent position was Group VP, Corporate Officer and Member of the Executive Management Committee. www.ecitele.com

EMC has promoted **David Goulden** from VP of Customer Operations to

EVP and CFO. **David Donatelli**, EVP, Storage Product Operations, will take on an expanded role that includes the development of EMC's entire portfolio of information storage systems and software. **David DeWalt**, an EVP and formerly President of EMC Software, has been named President, EMC Customer Operations and Content Management Software Group. VMware will continue to operate under the leadership of **Diane Greene**, VMware's President and co-founder. Joe Tucci, Chairman, President and CEO. ww.emc.com

Enablence has appointed **John Daniel Hilton** as VP of Finance and Administration. Most recently, Hilton co-founded KidsFutures. Enablence develops optical components, in particular triplexers and diplexers, using its proprietary Planar Lightwave Circuit (PLC) "Dispersion Bridge" platform, for the Fiber-to-the-Home (FTTH) market. Arvind Chhatbar, Chairman and CEO. www.enablence.com

Gear6, accelerating storage and delivering real time performance for the enterprise data center, has appointed **R. Elliot Carpenter** as VP of finance and operations, and **Brian Gladden** as VP of sales. Carpenter previously was CFO of Roxio. Gladden was formerly with NetApp. Tom Shea, president and CEO. www.gear6.com

GuardianEdge has appointed **Robert McLernon** as GM of Federal Sales. Most recently, McLernon served as senior systems engineering manager for Citrix's Federal Systems Division. Prior to Citrix, he served as federal sales manager at VistaScape Security Solutions. Alan Fudge, CEO. www.guardianedge.com

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GuideTech, a provider of high-throughput performance-gap-filling ATE solutions, has appointed **Frank McKinney** as president and CEO. McKinney previously held senior management positions with HP, Agilent, Teradyne, FormFactor and ADR Test Systems, including Senior Director of Business Development at Agilent, VP of Marketing at FormFactor, and most recently CEO of ADR Test Systems. www.guidetech.com

Holocom Networks has promoted **G. Bradford Saunders** from president & COO to president and CEO. Holocom manufactures secure classified network solutions for government and private users worldwide. www.holocomnetworks.com

Infrastruct Security has named **Offer Baruch** as Senior Consultant and **Richard Fisher** as EVP and Chief Security Officer. Baruch was a former Israeli Security Service agent. Fisher is a Certified Protection Professional and Certified Fraud Examiner. Daniel Weiss, founder, CEO, and president. infrastructsecurity.com

InnerWireless, a provider of in-building wireless systems, has appointed **Dr. Janet Lind** as VP of product development. Dr. Lind has served in various C-level and executive roles with Cyneta Networks, Nortel and Siemens. Most recently, she served as assistant dean for the University of Texas at Dallas' Jonsen School of Engineering and Computer Science. Ed Cantwell, president and CEO. www.innerwireless.com

JackBe, a provider of enterprise solutions that integrate SOA and Ajax to deliver rich Internet applications, has appointed **Bob Bianchi** as VP of

Sales. Bianchi, formerly an executive in sales and alliances at Novell, will report to president and CEO Luis Derechin. Prior to Novell, he was a VP of Sales for Silverstream Software. www.jackbe.com

July Systems has appointed **Michael Lunsford** as VP of Product Management. Lunsford previously was VP of Product Management for EverNote and VP of Product Management at MobileAria, Product Marketing Director at ViaFone, and Multimedia Producer at Sony America. July Chairman & CEO Ashok Narasimhan. www.julysystems.com

Kabira Technologies, a provider of transaction processing software, has appointed **Sanjay Saini** as VP of Global Customer Services. Saini previously headed Mercury Interactive's strategic consulting division and professional services practice for the Western and Central U.S. and Canada. Bradley Rode, COO. www.kabira.com

Kasenna, a provider of video-on-demand (VOD) content and MPEG-4 ready IPTV applications for Triple Play services over broadband networks, has hired **Sanjay Mehta** as VP of engineering. Mehta previously served as senior director of global systems development at Quantum, SVP of engineering and operations at Five9, and SVP of engineering at DirecTV Broadband. Kumar Shah, CEO. www.kasenna.com

LeftHand Networks has appointed **John Hillyard** as CFO. Hillyard previously served as CFO for public and private technology companies, including FrontRange Solutions, Intel iData Technologies and eFunds. Bill Chambers, CEO. www.lefthandnetworks.com

Liquid Computing, a developer of a new class of scalable computing system, has appointed **Bob DeMartino** as VP of Sales. DeMartino previously held senior executive sales and business development positions throughout a 16 year career at Sun. Liquid Computing has enjoyed over-subscribed product trial interest for its LiquidIQ Interconnect Driven Server, and will announce general availability in fall 2006. Brian Hurley, president and CEO. www.liquidcomputing.com

MAKE Technologies, a provider of legacy modernization, model-driven development and web services integration, has appointed **Bill Bergen** as president and CEO. Bergen most recently served as president of the Information Technology Association of Canada (ITAC), and prior to that, president of Oracle Canada. www.maketechnologies.com

Mark Logic, provider of an XML content server, has appointed **Andrew Grygiel** to the new position of VP of market development. Grygiel previously served as VP of the global industries group at EMC Software. Dave Kellogg, president and CEO. www.marklogic.com

MobiTV has appointed **Kay Johansson** as CTO. Johansson will drive the creation, development and deployment of mobile television technologies on mobile devices and PCs over the broad array of networks. Johansson previously served as CTO of Popwire, a former Ericsson company. Dr. Phillip Alvelda, CEO, co-founder and chairman. www.mobitv.com

Motive, a provider of broadband management software, has appointed **Rick Hanna** as COO, filling a vacancy in the senior management team. **Mike Fitzpatrick** has been

appointed CFO replacing April Downing. **Jack Greenberg** will fill the vacant position of general counsel. Hanna previously held division president positions with AT&T, MCI and MFS, and served as president of sales and operations at Teligent, and later as president of Teligent International. He also served as president and CEO of Cidera and AiMetrix. Fitzpatrick previously served as CFO for Frame Technology and recently specialized in providing leadership to private equity-funded technology startups and turnarounds. Most recently, Greenberg served as SVP & general counsel of BT Global, and SVP of international development and major transactions. Alfred Mockett, chairman and CEO. www.motive.com

Nakina Systems has appointed **Marco Pagani** as President & CEO, replacing co-founder David Vicary in a planned transition. Pagani's appointment follows two years of involvement with Nakina, first as an executive consultant to the Board and, since April 2006, as Chairman. Pagani has served as Chairman of a number of telecom companies, including Nimcat Networks, which was acquired by Avaya in 2005). At Nortel, he also served as President of Optical Ethernet and Storage Solutions, President of the Metro Optical Division, President of Core Networks, and GM of Carrier Data Networks. www.nakinasystems.com

Net Optics, a provider of passive monitoring solutions, has opened its European Sales Support Office in Frankfurt, Germany. **Uwe Skrzypek**, former director of net optics sales at system, GmbH, will head the new office. www.netoptics.com

Netezza has named **Jim Baum** as President and COO, reporting to CEO

Jit Saxena. Baum previously was president and CEO of Endeca and EVP and GM at Parametric Technology (PTC). www.netezza.com

Nortel has appointed **Darryl Edwards** as president, EMEA region. Edwards replaces Steve Pusey, EVP Nortel and president of Nortel EMEA who is leaving the company to join Vodafone as CTO. Most recently, Edwards was Nortel president of Northern Europe, Middle East and NETAS, Nortel's joint venture in Turkey. In the past, he has been CEO of Nortel Israel and of Nortel Germany. Mike Zafirovski, president and CEO. www.nortel.com

OATSystems, a provider of RFID solutions, has appointed **Andrew Macey** as VP of Sales, Services, and Client Solutions. Macey previously served as VP in the Retail & Consumer Products practice, global practice lead for Supply Chain, and co-lead of the Business Consulting practice at Sapient. Michael George, CEO. www.oatsystems.com

Onaro has appointed **Bob Maynard** as VP of sales. Maynard most recently served as VP of Sun's Global Identity Management practice. Doug McNary, president and CEO. www.onaro.com

OpenService, a leading provider of Security Information and Event Management (SIEM), Event Correlation and Network Monitoring solutions, has promoted **Geoffrey Coulter** from senior systems engineer to CTO. Coulter previously served as Principal Security Architect for Managed Security Services at Sprint and Virtela and was instrumental in guiding the largest deployment of OpenService's first security application, System-Watch. Ted Joseph, Chairman and CEO. www.openservice.com

Overland Storage has promoted **Philippe Cazaubon** from VP of Asia Pacific to VP of worldwide sales. Christopher Calisi, president and CEO. www.overlandstorage.com

PatchLink, a provider of patch and vulnerability management solutions, has appointed **Patrick Clawson** as Chairman, CEO and President. Clawson was formerly Chairman and CEO of CyberGuard. **Greg Head**, the interim President, will continue as SVP of Marketing.

Persysent Technologies has appointed **Bob Whirley** as SVP of worldwide sales. Whirley previously served as SVP of sales for eEye Digital Security. Ray Weadock, president and CEO. www.persysent.com

Ping Identity has appointed **William (Bill) Dedrick** as VP of Worldwide Sales. **Mark Viens** joins as VP of Global Client Services. Dedrick has served in senior management roles for several software companies including Relicore (acquired by Symantec in 2006), IBM, Venetica (acquired by IBM in 2004), Rational Software (acquired by IBM in 2003), SQA (acquired by Rational in 1997), Easel, and Intersolv (now Merant). Viens previously was VP of Customer Care at Macromedia. www.pingidentity.com

Ruckus, a provider of college-only multimedia services, has appointed **Michael Bebel** as CEO. Bebel was formerly COO of Napster and president and CEO of Mashboxx. He also held a number of executive positions with Universal Music Group (UMG) and Universal Studios. Ruckus has also closed \$13.7M in second round funding from Battery Ventures, Eastward Capital, Pinnacle Ventures and Shelter Capital. By the start of the Fall 2006 semester, there will be more

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than 70 schools bringing the Ruckus service to their students. www.ruckus.com

SchemaLogic has appointed **Michael Kilgore** as VP of engineering. Kilgore previously served as CEO and founder of InfoClear Consulting VP of engineering for OpenService, VP of engineering for Cerulean Technologies, and VP of development for DeskTop Data. Jeff Dirks, president and CEO. www.schemalogic.com

SteelCloud, an integrator of network centric and embedded computing solutions, has appointed **Mitch Turpyn** as VP of Sales. Turpyn will spearhead SteelCloud sales initiatives into the Federal integrator and Independent Software Vendor (ISV) markets. Turpyn previously was Executive Director, Business Development for NCS Technologies, a company specializing in ruggedized and purpose-built computers for government markets. Clifton Sink, president and CEO. www.steelcloud.com

Sunrise Telecom, a communications test and measurement equipment provider, has appointed **Robert Heintz** as an executive officer and to the newly created position of VP of Worldwide Sales and Marketing. Heintz most recently was VP of North American Sales. Prior to Sunrise Telecom, he was founder and Chairman of Accelerant, a managed security services provider, which was sold to GRIC Communications in December 2003. Paul Marshall, president and CEO. www.sunrisetelecom.com

Symbol has appointed **Sanford (Sandy) Preizler** as VP of worldwide

channels. Preizler previously was VP of worldwide RFID sales for Symbol. www.symbol.com

Synchronica, a developer of mobile device management and synchronization solutions, has appointed **Kim Hartlev** as CTO. Previously, as CTO, Hartlev was the key architect of Mobilethink's over the air (OTA) protocol and mobile device management (MDM) platform design. Carsten Brinkschulte, CEO. www.synchronica.com

The 41st Parameter, a provider of agent-less, covert fraud detection and prevention solutions for the online channel, has appointed **Michael Yakel** as VP of professional services, eCommerce. **David Britton** was named VP of product management, a new position. Yakel most recently was VP of emerging products for Visa U.S.A. Britton previously served as VP of professional services, eCommerce. Ori Eisen, CEO and founder. www.the41.com

Tripwire, a provider of change auditing software, has appointed **Dan Schoenbaum** as SVP of marketing and business development. Schoenbaum previously served as chairman of the M&A Committee and VP of business development at Compuware. With record new customer adoption, the company recently reached a record eight consecutive quarters of profitability and positive cash flow, continuing its strong growth at 36%. Jim Johnson, president and CEO. www.tripwire.com

VitalStream has named **Michel Maeso** as EVP of global sales and marketing reporting to chairman and CEO, Jack Waterman. Maeso previously was EVP of worldwide sales for Packet Design and VP of sales for Speedera Networks. Maeso replaces

Michael Linos, who has assumed the role of VP of strategic sales, reporting to Maeso. Before joining VitalStream in 2003, Linos was VP of sales at NTT/Verio. **Eric Mersch** was named CFO. Current CFO **Mark Belzowski** will remain with the company in a senior capacity. Mersch previously served as VP, finance for Harrah's Las Vegas and The Flamingo. Jack Waterman, chairman and CEO. www.vitalstream.com

Voltage Security has appointed **John Weald** as VP of Engineering. Weald previously was CTO and SVP of Engineering at Sylanro Systems and VP of Engineering at Worldtalk, which was acquired by Tumbleweed. Sathvik Krishnamurthy, president and CEO. www.voltage.com

Xirrus, a provider of high capacity, long range Wi-Fi products, has appointed **Alan Amrod** as VP of Marketing and **Alan Hahn** as VP of Sales. Amrod previously was VP of Marketing for Ixia and VP of Enterprise Marketing at Alcatel. Hahn previously was VP of Worldwide Sales for LogLogic, VP of Sales for Tumbleweed Communications, via the acquisition of Corvigo, where he served as VP of Sales. Dirk Gates, founder and CEO. www.xirrus.com

ZNYX Networks, a provider of embedded networking solutions, has appointed **Stan McClellan, Ph.D.** as VP of Business Development and Chief Architect of Systems & Solutions reporting to Connie Austin, president & CEO. McClellan previously served as Distinguished Technologist & Technical Director at HP, and Principal Architect & Director of Applications Engineering at SBE. www.znyx.com ■

Funding & IPOs

Boingo Wireless, a wholesale network aggregator and operator of neutral-host Wi-Fi networks, has closed \$65 million in an oversubscribed Series C funding round from new and existing investors to secure long-term working capital and to underwrite the recent acquisition of Concourse Communications.

The funding was led by Mitsui & Co., with new investors Mitsui Corporate Development Funds of Mitsui & Co. and Mitsui & Co. (U.S.A.) participating. Other new investors include Steelpoint Capital Partners and Red Rock Ventures. Existing investors New Enterprise Associates, Mitsui & Co. Venture Partners and Sternhill Partners also participated. David Hagan, president and CEO. www.boingo.com

Bradford Networks, a provider of network access control (NAC) solutions, has secured \$2 million in Series A funding led by Windspeed Ventures. Bradford's Campus Manager product line delivers the three key elements of effective NAC solutions – end point security, identity management and usage policy enforcement – in a single integrated solution. Mike Gadoury, CEO. www.bradfordnetworks.com

Cisco has made an investment in **Nuova Systems** to accelerate next-generation product development in the data center. As a result, Nuova will become a majority-owned subsidiary of Cisco. Cisco has committed certain technology and \$50 million of funding with the possibility of up to \$42 million in additional funding in the future. The subsidiary will be approximately 80% owned by Cisco, with the remaining 20% interest held by employees of the subsidiary.

Nuova's product development efforts will complement Cisco's current data center product portfolio which includes the Catalyst 6500, Cisco's core enterprise networking platform, the MDS line of storage switches, SFS server networking switches and application networking solutions for accelerating applications within the data center and to the rest of the enterprise. Nuova has 76 employees and is based in Santa Clara, California. Nuova was founded by leaders in the networking and data center space, including former Cisco executive Mario Mazzola.

Covega, a provider of opto-electronic components and subsystems, has raised \$10 million in expansion financing led by Core Capital Partners, Intersouth Partners, and Optical Capital Group/HRLD and including Siemens Venture Capital and Square One Bank. Covega was formed in March 2003 from the merger of CODEON and Quantum Photonics, and has raised \$30 million since its inception. Covega's products now sell either directly or indirectly into 8 of the 11 leading systems integrators and OEMs. Joe Dixon, CEO. www.covega.com

Digium, the original creator of Asterisk and pioneer of open source telephony, has closed \$13.8 million from Matrix Partners in its first round of venture capital funding. Digium is the original creator and primary developer of Asterisk, an open source PBX and Asterisk Business Edition, the professional-grade version of Asterisk. Used in combination with Digium's PCI telephony interface cards, Asterisk offers a cost-effective approach to voice and data transport over IP, TDM, switched and Ethernet architectures. Profitable since 2002, Digium has experienced 100%

growth in each of the last several years. Today Asterisk boasts over 1 million users (growing by over 1,000 downloads per day), and 130 Genuine Asterisk solutions partners worldwide. Mark Spencer, president of Digium and creator of Asterisk. www.digium.com

DiVitas Networks, a provider of seamless, unified mobility solutions for enterprise networks, has raised \$15 million in its oversubscribed Series B round of funding. Lead investor Menlo Ventures was joined by existing investor Clearstone Venture Partners. To date, the company has raised \$23 million. Vivek Khuller, CEO. www.divitas.com

Egenera, a provider of datacenter virtualization solutions, has raised \$26 million in Series E funding led by new investors Pharos Capital Group and Fujitsu Siemens Computers, and completed at a significantly increased valuation over Egenera's previous financing round. Egenera's core major investors also participated. Egenera has raised more than \$150 million in private funding to date. www.egenera.com

GigaBeam (OTCBB: GGBM) announced the private placement of \$10 million of Series C convertible preferred stock and common stock purchase warrants to a number of institutional investors. GigaBeam WiFiber products operate in the 71-76 GHz and 81-86 GHz radio spectrum to enable multi-Gigabit-per-second communications. www.gigabeam.com

Inlet Technologies, a provider of encoding solutions for digital media, has extended its Series B round of venture financing, and secured an additional \$4.4 million. Core Capital Partners is the largest investor in this

Funding & IPOs

(Continued from page 17)

round of financing. Initial Series B investors, including Technology Venture Partners, Telecommunications Development Fund and Capitol Broadcasting Company also participated. Inlet's Fathom is a real-time encoding platform for SMPTE VC-1 and Windows Media high definition video. Neal Page, CEO. www.inlethd.com

Interwise, a provider of voice, Web and video conferencing for the enterprise, has closed \$9 million in a recapitalization round of equity funding from existing investors Lazard Technology Partners, Jim Manzi, Wall Street Technology Partners, Leeds Equity and GIMV (Belgium). Frank Zvi, president and CEO. www.interwise.com

IPG Photonics, a developer of develops fiber lasers and amplifiers, has filed a registration statement on Form S-1 with the SEC for a proposed IPO of its common stock. Merrill Lynch and Lehman Brothers are acting as joint book-running managers. Needham & Company, Jefferies & Company and Thomas Weisel Partners are acting as co-managers. www.ipgphotonics.com

IPLocks, a provider of database security and compliance solutions, has secured an additional \$4.4 million in funding from institutional and individual investors as a result of the oversubscription to its recent Series D round. Akio Sakamoto, President, CEO and Co-founder. www.iplocks.com

Kazeon, a provider of Unstructured Information Management solutions, has received \$21 million in third round financing, bringing the total

investment in the company to \$44 million. The investment syndicate includes Menlo Ventures, who led the round, and Focus Ventures with all existing investors increasing their investment. Sudhakar Muddu, CEO & founder. www.kazeon.com

Maven Networks has closed \$12 million in Series C funding led by Prism Venture Partners and including existing investors Accel Partners and General Catalyst Partners. The company has raised \$30 million to date. Maven's Maven Media System (MMS) enables media companies to design and launch professional broadband video channels. MMS is used by 20th Century Fox, A&E Television Networks International, Disney Buena Vista Pictures, Hallmark Channel, National Geographic Channel, Pepsi, Nike, and Sony Pictures. Hilmi Ozguc, founder, Chairman and CEO. www.maven.net

Motricity has received \$32 million in funding to further the company's expansion in the mobile content industry. The \$32 million is part of a larger funding round that will close in stages in the coming weeks. It was led by Advanced Equities with participation from other existing investors. Concurrently, **David Holland**, VP and treasurer of Cisco and **Steve Clark**, former CEO of SpectraSite Communications, have been appointed to the Board. Ryan Wuerch, chairman and CEO. www.motricity.com

Nexidia, a provider of audio search and speech analytics solutions for government intelligence, contact center management, rich media content producers and the legal industry, has raised up to \$13 million in financing from Morgan Stanley who joins existing investors H.I.G. Ventures, Boston Millennia Partners, Paladin Capital Management, Cordova Ven-

tures and SAIC Venture Capital. John Willcutts, CEO. www.nexidia.com

Oakley Networks, a provider of Information Leakage Detection and Prevention solutions, has secured \$12 million in Series B funding from new investor Duff Ackerman & Goodrich Ventures (DAG Ventures). Derek Smith, CEO. www.oakleynetworks.com

RenewData, a provider of electronic discovery, email archiving, and compliance solutions, has raised \$30 million in Series C financing led by ABS Capital Partners and including existing investor CIBC Capital Partners. RenewData's revenue has grown 700% in the past two years. Bob Gomes, president and CEO. www.renewdata.com

Send Word Now, a provider of Smart Notification Services, has closed \$10.5 million in Series B funding led by Ascend Venture Group including existing significant investors. Send Word Now's Smart Notification Services enable businesses and organizations to communicate via voice or text notifications with hundreds or thousands of people. Mitchell Orlovsky, CEO and president. www.sendwordnow.com

sentitO Networks, a provider of intelligent voice gateway and signaling solutions, has raised \$6 million led by Columbus Nova Capital, an affiliate of Russian-based RENOVA Group of Companies, with previous investors Core Capital Partners, Inflection Point Ventures, Kodiak Venture Partners, Mid-Atlantic Venture Funds, and Technology Venture Partners also participating. Steve Crumme, CEO. www.sentitO.com

Wireless China, a wireless value-added service provider based in

Beijing, China, has raised a \$1.2 million (US) preferred seed round of funding. Shanghai-based Dragonvest Partners and Waltham, Mass.-based Kodiak Venture Partners co-led the round. The funding will be used to launch the company's service in Guangdong Province (next to Hong Kong), Zhejiang Province (next to Shanghai) and Shanghai. Wireless China provides a SMS-based mobile internet platform to China Mobile, Asia's largest telecom carrier. This platform allows individual users or enterprises to register their Chinese names as SMS-based URLs for an annual fee. The Chinese mobile user base is the largest in the world and now exceeds 410 million subscribers. Nearly one billion SMS messages are sent daily across China's two mobile networks. Ni Jianzhong, Chairman.

WorldGate (NASDAQ: WGAT), provider of the Ojo personal video phone, has completed a transaction for up to \$11 million of convertible debenture financing with Cornell Capital Partners. WorldGate makes the Ojo video phone. Hal Krisbergh, Chairman and CEO. www.WGATE.com ■

Mergers & Acquisitions

Brocade has entered into a definitive agreement to acquire **McDATA** in an all stock transaction valued at approximately \$713 million. Upon completion of the transaction, McDATA stockholders will own approximately 30% of Brocade. The transaction is expected to be accretive by the fourth quarter of combined operations. This combination is expected to generate annual synergies of approximately \$100 million, coming from both headcount and non-headcount related expenses, by the fourth quarter of combined operations.

Michael Klayko, Brocade CEO; John Kelley, McDATA chairman, president and CEO. www.brocade.com, www.mcdata.com

Cisco has signed a definitive agreement to acquire **Arroyo Video Solutions**, a provider of solutions for on-demand television and related consumer services, for approximately \$92 million in cash. Joining Cisco from Arroyo will be Drew Major, an original founder of Novell, and Paul Sherer, former CTO at 3Com. Arroyo was founded in 2002 and has 44 employees. Upon close, the Arroyo team and product portfolio will be integrated into the Cisco Cable & Video Initiatives Group, within the Service Provider organization led by SVP & GM Michelangelo Volpi.

Citrix has signed a definitive agreement to acquire **Orbital Data**, a provider of solutions that optimize the delivery of applications over WANs, for approximately \$50 million in cash. According to IDC Research, the market for WAN optimization products was \$314 million last year and is expected to nearly double over the next three years, reaching \$610 million by 2009. Founded in 2002, Orbital Data has over 75 enterprise customers and over 60 employees. For 2007, the transaction is expected to add \$10 to \$12 million in revenue. Citrix plans to reintroduce the Orbital Data product line under the Citrix WANScaler brand. The new Citrix WANScaler team will become part of the company's Application Networking Group headquartered in San Jose, California. BV Jagadeesh, VP & GM, application networking at Citrix; Dick Pierce, CEO, Orbital Data. www.citrix.com

Comm-Works, a single-source provider of enterprise voice, data and technology solutions for corporations

and government agencies, has acquired **Intalex**. Intalex specializes in the installation of voice, data and technology systems with particular expertise in large, multi-location roll-outs for sizeable retail organizations including CVS Pharmacy and Walgreens. The acquisition will increase revenue by 40%, and the combined company expects to have revenues of approximately \$75 million in 2006. Alan Lampe, Comm-Works' co-founder and CEO, will lead the newly merged organization. www.comm-works.com

CommScope (NYSE:CTV) has decided not to pursue its proposal to acquire **Andrew**. The company had previously proposed to acquire **Andrew** (NASDAQ:ANDW) for approximately \$1.7 billion in cash, representing a premium of approximately 36% over the existing merger agreement between Andrew and **ADC Telecom**, which was announced in May. www.commscope.com

Comverse (NASDAQ: CMVT) has signed a definitive agreement to acquire **Netonomy** for approximately \$19 million in cash. Netonomy, a provider of customer self-service, bill analysis and point of sale (POS) solutions, extends Comverse's portfolio of real-time billing and customer management solutions for communication service providers by adding additional tools to increase efficiency and enhance the end-customer experience. Netonomy's self-service application suite allows consumers, enterprises, and retailers to activate and manage subscriptions, buy new products and services, and review, analyze and pay bills using virtually any communication device. Customers include Bouygues Telecom, several Orange operators, T-Mobile UK,

Mergers & Acquisitions

(Continued from page 19)

Telstra and Vodafone UK. Raz Alon, interim CEO of Comverse; John Ball, CEO of Netonomy. www.comverse.com

Digi International (Nasdaq: DGII) has acquired **MaxStream**, a provider of wireless device networking products, for \$38.5 million comprised of \$19.25 million in cash and \$19.25 million in stock. Based in Lindon, Utah and employing 49 people, MaxStream generated \$10.4 million in revenue and \$1.3 million in net income in the year ending December 31, 2005.

Digi anticipates MaxStream will contribute revenue in a range of \$20 million to \$24 million for fiscal year 2007. Digi is focused on connecting commercial and industrial devices via both embedded and boxed/packaged products. MaxStream wireless technologies and products expand Digi's wireless offering, covering both short and medium range using embedded modules and boxed/packaged solutions. Joe Dunsmore, Chairman, President and CEO of Digi; Brad Walters, president and CEO of MaxStream. www.digi.com, www.MaxStream.net

Eicon Networks has signed an agreement for **Intel** to sell the assets of its media and signaling business to Eicon. Terms were not disclosed. Concurrently, Investcorp Technology Ventures and Tennenbaum Capital Partners will invest in Eicon, with Investcorp serving as the lead equity investor in the transaction and Tennenbaum providing a credit facility and serving as an equity co-investor. The media and signaling business includes approximately 600 employees and it is expected that a significant

number of these employees will become employees of Eicon.

Intel's media and signaling business includes all of the product lines from Intel's **Dialogic** acquisition, as well as Host Media Processing (HMP) software and HMP-enabled blades. Intel's complete line of SS7, PBX integration and gateway solutions are also included in the sale. With Eicon's complementary Diva Server line of products, it is anticipated that the acquisition will enable Eicon to provide enhanced enterprise and service provider offerings to current Eicon and Intel customers as well as future customers. Eicon plans to continue to work closely with Intel as an active member of the Intel Communication Alliance. Nick Jensen, Eicon president and CEO. www.eicon.com

Glow Networks, a research, consultancy and engineering firm providing end-to-end network services and solutions for the telecom market, has acquired the assets of **Tri-MC Enterprises**, a provider of telecom Engineer, Furnish & Install (EF&I) services. Dr. Jay Srinivasan, president of Glow; Larry McDonald, president of Tri-MC. glownetworks.com

Harmonic (NASDAQ: HLIT) has entered into a definitive agreement to acquire the video networking software business of **Entone Technologies** for \$45 million comprised of \$26 million in cash and approximately 3.54 million shares of stock. Entone has over 35 deployments of its IPTV VOD solution including PCCW, the largest IPTV operator. The Entone software solutions, encompassing content ingest, distributed content management and video streaming, facilitate the provisioning of personalized video services including video-on-demand (VOD), network personal video recording (nPVR), time-shift-

ed television and targeted advertisement insertion. By combining Harmonic's video headend, edge and access network solutions with Entone's on-demand software, Harmonic will be able to provide an integrated delivery system for both broadcast and personalized IP-delivered video services. Patrick Harshman, president and CEO of Harmonic; Steve McKay, CEO of Entone. www.harmonicinc.com, entone.com

IBM has entered into a definitive agreement to acquire **Internet Security Systems** for approximately \$1.3 billion in cash. ISS has more than 11,000 customers worldwide including 17 of the world's largest banks, 15 of the largest governments, 11 of the top public insurance companies and 13 of the world's top IT organizations. ISS will join IBM as a business unit within the IBM Global Services' Security organization. Val Rahmani, GM, Infrastructure Management Services, IBM Global Services; Tom Noonan, President and CEO of ISS. www.iss.net

LogMeIn. (formerly 3am Labs), a developer of remote connectivity and support services, has acquired **Applied Networking**, maker of Hamachi, a zero-configuration VPN service. Terms were not disclosed. Introduced in beta in January 2004, Hamachi has more than three million users, adding 400,000 new computers each month. Alex Pankratov, founder and CEO, Applied Networking; Michael Simon, CEO, LogMeIn. LogMeIn.com, www.hamachi.cc

NETGEAR has executed a definitive agreement to acquire **SkipJam**, a provider of integrated software for home entertainment and control, for up to \$9 million in cash. SkipJam's technology will form the basis of future NETGEAR multimedia products,

including media centers, media players, and audio players, builds upon NETGEAR's first generation of digital home entertainment products. SkipJam was founded in 2002. Michael Spilo, SkipJam CEO, will become NETGEAR's VP, Engineering for Multimedia Products. Patrick Lo, NETGEAR Chairman & CEO.

Nokia has signed an agreement to acquire **Loudeye**, a provider of digital music platforms and digital media distribution services, for approximately \$60 million in cash. Loudeye operates 60 live services in over 20 countries and multiple languages across Europe and South Africa, Australia and New Zealand. Loudeye aggregates rights and content from all the major labels and hundreds of independents and currently offers licensed catalog and complete media for over 1.6 million tracks. Loudeye employs approximately 130 people with reported revenue in 2005 of approximately \$20.3 million, excluding discontinued operations. Anssi Vanjoki, EVP & GM, Multimedia, Nokia, Michael Brochu, president and CEO of Loudeye. www.Loudeye.com

Sycamore Networks has entered into a revised definitive agreement to acquire Allen Organ's majority-owned subsidiary, **Eastern Research**, a provider of network access solutions for wireline, wireless, and private network operators. Under the terms of the revised agreement, the total consideration to be paid to Allen Organ shareholders and the minority shareholders of Eastern Research to acquire Eastern Research will be \$80 million in cash. The original agreement dated April 12, 2006 contemplated a \$92.5 million transaction, comprised of approximately \$84.5 million in Sycamore stock and \$8 million in cash. www.sycamorenet.com, erinc.com

TANDBERG Television has signed a definitive merger agreement to acquire **Zetools**, a developer of software that enables the delivery of digital video services over the Internet. In the past five years, Zetools has built a customer base of leading media companies, including AOL, NBC Universal, MTV Networks and Viacom. By incorporating its on-demand and interactive technologies with Zetools' Internet TV software, TANDBERG is increasing its ability to enable the publishing, distribution and monetization of video content across any platform, to any digital device. Eric Cooney, President and CEO of TANDBERG; Richard Cardran, VP of product development at Zetools. tandbergtv.com, www.zetools.com

Time Warner Telecom has signed a definitive agreement to acquire **Xspedius Communications**, for \$531.5 million, consisting of \$212.5 million in cash and \$319 million in stock. Xspedius is a metro fiber-based provider of integrated communications services primarily to enterprise businesses as well as carrier customers. Xspedius provides a suite of high quality services, including metro Ethernet, local and long distance voice, data and dedicated Internet access services, in 43 markets across 18 states and the District of Columbia.

For the full year 2007, Xspedius should generate approximately \$230 to \$250 million of revenue. The company expects to achieve annualized cost synergies of approximately \$40 to \$50 million within 12 to 18 months of closing. Thermo Capital Partners is the majority owner of Xspedius. Paul Pierron, president and CEO; Larissa Herda, Chairman, CEO and President of Time Warner Telecom. www.twtelecom.com

Unity Wireless (OTCBB: UTYW), a supplier of wireless systems and coverage-enhancement solutions, has closed its acquisition of **Celletra**, an Israel-based supplier of coverage enhancement solutions for 2G and 3G wireless networks. Celletra's revenues for fiscal 2005 were \$7.2 million. Shaike Schatzberger, Celletra's CEO; Ilan Kenig, president and CEO of Unity Wireless. www.unitywireless.com ■

Business & Financials

AirMagnet has surpassed the 5,000 customer mark, which is claimed to be nearly 10 times that of its next closest competitor. AirMagnet creates products designed to survey, secure and monitor wireless LANs. Dean Au, president and CEO. www.airmagnet.com

EqualLogic, a provider of enterprise-class iSCSI storage area network (SAN) solutions, has sustained steady quarter-over-quarter revenue growth and achieved profitability. The company has maintained 40% sequential quarterly sales growth over the last three years and has achieved sustainable profitability in the second quarter of this year. The company has acquired more than 1,400 customers in 30 countries, and added 265 customers in Q2. EqualLogic is ranked #2 in worldwide iSCSI SAN terabytes shipped in 2005, according to IDC, and is ranked #2 with 15% of the overall iSCSI SAN market, while becoming the largest provider of pure-play iSCSI disk arrays in 2005, according to a leading analyst firm. Don Bulens, president and CEO. www.equallogic.com

Onaro, a provider of storage service management solutions, announced that Q2 was the strongest quarter in

Business & Financials

(Continued from page 21)

both revenue and customer growth in the company's history. In addition, the company reached profitability for its second straight quarter. Onaro added 14 new customers with penetration into the wireless industry especially strong. Onaro is now used by the top three wireless providers in addition to some of the world's largest corporations. **JetBlue** is using Onaro's SANscreen Foundation to meet the challenges posed by the airlines rapid growth and corresponding SAN expansion. Doug McNary, president and CEO. www.onaro.com

Platform Computing, a provider of enterprise grid software, has entered into an agreement to hire the principals of **Scalable Systems Pte Ltd.** Based in Singapore. The Scalable Systems team will be instrumental in the establishment of Platform's Open Source Grid Development Center (OSGDC). Songnian Zhou, CEO. www.platform.com ■

Market Research

Combined revenues for Cable, DSL, and PON access concentrators and customer premises equipment (CPE) will peak at \$9.1 billion in 2006 and gradually fall to \$8.2 billion in 2010, below total market revenues in 2005, according to **Dell'Oro Group**. Broadband subscriber additions will peak in 2006, and service providers are already starting to focus on upgrading their access networks rather than primarily purchasing equipment to support new subscribers. www.delloro.com

Total PBX revenues are projected to reach \$7.1 billion annually in 2010, according to **Dell'Oro Group**.

Driven by expanding demand for VoIP in the enterprise, sales of IP Lines are projected to reach \$4.6 billion in 2010, a 24% CAGR.

Sales of softswitches and media gateways are forecasted to double from \$2.5 billion in 2005 to \$5 billion in 2010, according to **Dell'Oro Group**. Sales of Class 4 trunk networks drove the market for Next Generation Network equipment in 2005. However, Dell'Oro predicts that Class 5 subscriber solutions will drive growth in the future as VoIP services gain popularity among both consumers and businesses.

The **worldwide EDGE handset market** will reach 148 million shipments in 2006, representing 14% of the total mobile phone market, reports **ABI Research**. "EDGE is downplayed in the market because it cannot provide a mobile broadband experience and is therefore not seen as being at the cutting edge of cellular handset evolution; it is viewed purely as an evolutionary step on the GSM ladder, and industry attention is very much focused on the newer technologies such as W-CDMA and HSDPA." However, ABI analysts believe the industry should pay more attention to this market because EDGE is the only choice for some carriers today to support any type of near-acceptable mobile broadband experience, especially those with no

3G licenses or those waiting for 4G. www.abiresearch.com

In 2005, there were 153.1 million total **DSL ports** shipped worldwide, including CO and CPE for ADSL, VDSL, and SHDSL, and the number of ports shipped is expected to grow to 185.5 million in 2010, according to **In-Stat**. Revenues through 2010 will decline, however, as there is increasing pressure on price from DSLAM vendors. While data and VoIP continue to drive the DSL IC chipset market, and will account for the bulk of port shipments through 2010, the delivery of IPTV capability is the wave of the future. Carriers worldwide are using ADSL2+ and VDSL2 as they upgrade their networks to deliver television and video service. www.instat.com

Worldwide revenue from mobile video services is set to skyrocket from \$46.2 million in 2005 to \$5.6 billion in 2009, if mobile video providers are able to resolve a number of quality- and content-related issues, according to **Infonetics Research**. The number of mobile video handsets sold worldwide is expected to grow from 28 million in 2005 to 336 million in 2009. infonetics.com ■

Emerging Trends

Sprint Nextel plans to develop and deploy a fourth generation nationwide broadband mobile network using the **mobile WiMAX** (Worldwide Interoperability for Microwave Access) IEEE 802.16e-2005 technology standard. The WiMAX technology to be deployed in the network is expected to offer a cost-per-megabit and performance advantage that reflects a substantial improvement in the comparable costs for the current 3G mobile broadband offerings.

10 Gigabit Ethernet Switch Market 2Q06 Market Leaders (Revenue)

Total Market	2Q06
Manuf. Revenue	\$302 million

Vendor	Rank
Cisco	1
Force10	2
Foundry	3
Nortel	4
Extreme	5
HP ProCurve	6

Source: Dell'Oro Group

The Sprint Nextel 4G mobility network will use the company's extensive 2.5GHz spectrum holdings, which cover 85% of the households in the top 100 U.S. markets – the most of any wireless carrier in any single spectrum band, according to Sprint. To access that network, Sprint Nextel will work with Intel, Motorola and Samsung to incorporate WiMAX technology for advanced wireless communications and help make chipsets widely available for new consumer electronics devices.

Sprint Nextel is expecting to invest \$1 billion in 2007 and between \$1.5 billion and \$2 billion in 2008 relating to the 4G mobile broadband network. Deployment plans target a launch in trial markets by the end of 2007 with plans to deploy a network that reaches as many as 100 million people in 2008. Sprint Nextel plans to expand mobile WiMAX network coverage thereafter.

The **Maui High Performance Computing Center (MHPCC)**, an Air Force research laboratory center managed by the University of Hawaii, will install a 5,120-processor high-performance computing cluster using Dell servers. The acquisition is the largest in the history of MHPCC and the first significant purchase from Dell. MHPCC is a national resource chartered to help solve complex computational problems for the U.S. DoD and other government users.

The new cluster, made up of 1,280 Dell PowerEdge 1955 blade servers with dual-core processors, will increase computational capability to more than 60 teraflops. In related news, the Dell benchmarking center at Texas Advanced Computing Center (TACC) at The University of Texas at Austin has upgraded its Dell supercomputing cluster, Lonestar,

using Dell PowerEdge 1955 blade servers. Doubling in size from 650 nodes to 1,300, the cluster will possess a peak performance of more than 55 teraflops when the system achieves full production status this fall. ■

Licensing & Partnerships

Lockdown Networks and **AEP Networks** have entered into a technology licensing, co-development and marketing partnership which will integrate Lockdown's Network Access Control (NAC) solution, Lockdown Enforcer, into AEP's Policy Networking security solutions. Lockdown and AEP will enhance Lockdown's iNAC integration capability to enable use of the Lockdown Enforcer technology to provide endpoint health-check, quarantine and remediation capabilities that work with the AEP Netilla Security Platform (NSP) SSL VPN. Brett Helsel, CEO at Lockdown; Reginald Best, EVP/GM Application Security Business, AEP. www.LockdownNetworks.com, aepnetworks.com

Customer Wins & Trials

Digit Wireless announced its first U.S. deployment of Fastap in its alphanumeric format with wireless carrier, **Alltel Wireless**. This is the first U.S. implementation of a Fastap-enabled handset — the LG AX490. Fastap is a new approach to keypad design, which simplifies user discovery, access and the use of mobile phone-based applications including SMS, Instant Messaging, Multimedia Messaging, Web Browsing, mobile music and more. Fastap enables the LG AX490 to maintain mainstream phone size and form factor by integrating a raised (alpha keys) and low-

ered (number) key architecture powered by error prevention software that makes use error and care-free. The AX490 is claimed to be the only one-touch full alphanumeric keypad on a mainstream flip phone. Mark Connon, CEO. www.digitwireless.com

GigaBeam (NASDAQ:GGBM) has received an order from Wireless Facilities Inc. (WFI) (NASDAQ:WFII) for 20 WiFiber wireless fiber links. This order follows a previously announced order for 12 links, 5 of which were delivered in the first quarter for subsequent installation at the City of Sioux Falls, SD, and other unannounced orders totaling 12 links. GigaBeam is a provider of high-performance wireless point-to-point communications access solutions that operate in the licensed 71-76 GHz and 81-86 GHz radio spectrum bands. www.gigabeam.com

Hatteras Networks, a Mid-Band Ethernet (MBE) service specialist, announced that **BellSouth** has selected Hatteras Ethernet Service Edge platforms to deliver BellSouth Mid-Band Ethernet service offerings. BellSouth chose Hatteras' Ethernet platforms because of their patented service architecture that enables BellSouth to transparently deliver fiber optic-grade Ethernet services over existing last-mile copper facilities.

Capable of delivering up to 45 Mbps of symmetrical Ethernet service over existing last-mile copper, Hatteras' solutions give carriers the flexibility required to create a rich service portfolio that includes: Ethernet private line, transparent LAN services, VoIP, Internet access, and VPNs with symmetrical service flexibility from 1Mbps to 45Mbps. Kevin Sheehan, president and CEO. www.hatterasnetworks.com ■

Startups In This Issue

- ✓ **Broadway Networks** – PON-based Broadband Access Platform
- ✓ **Tendril** – Operations Software for Wireless Sensor Networks
- ✓ **Cohda Wireless** – Municipal & Public Safety Wireless Solutions
- ✓ **Terascala** – Storage Appliances for Linux Clusters
- ✓ **Imagine** – PersonalizedTV Platform for Broadband Operators
- ✓ **VeriWave** – Wireless LAN Analysis Tools
- ✓ **Movidis** – 16-core, 64-bit MIPS-based Servers
- ✓ **WiNetworks** – Hybrid WiMAX DVB Solutions
- ✓ **Porticus** – Voice Biometric Authentication Solutions
- ✓ **Zenoss** – Open Source Enterprise Network Monitoring Software

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