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India

HCL Infosystems to sell Echelon smart electricity metering ***HCL Infosystems has become a value-added reseller (VAR) of Echelon Corporation's Networked Energy Services (NES) advanced metering system in India.***

HCL Infosystems is a major information and communication technologies system integrator, specialising in infrastructure projects including power and utility systems. HCL plans to market Echelon's NES to utilities looking to improve power delivery while reducing operation costs, and to provide revenue recovery and protection.

According to Echelon, "With an estimated 56 percent of rural households and 12 percent of urban households still without adequate access to electricity and peak power shortage of around 15 percent, availability of power is viewed as critically linked to the ability of India's economy to maintain its current nine percent annual growth rate.

"India's power ministry plans to provide electricity to every household by 2012 – at an investment of over \$US100 billion in new generation, transmission, distribution and rural electric infrastructure. To achieve this goal, electricity generation and distribution capacity will need to be increased by an amount greater than what has been available in India for the last fifty years. India's top analysts are predicting that power deficits could cap the country's growth in coming years."

Echelon claims that advanced metering infrastructures like its NES system can make the energy grid more efficient by enabling utilities to implement direct load control and demand/response programs, limit maximum energy consumption during times of peak demand and detect and reduce meter tampering and energy theft.

George Paul, executive vice president, HCL Infosystems, said: "We chose to partner with Echelon because its NES system is the most advanced smart metering solution available and it provides a platform for growth into the future. The system can bring many benefits to both grid operators and end-users, making it an ideal solution for the fast-changing needs of India."

The NES consists of a family of electronic electricity meters accessed via a web services based network operating system over an IP networking infrastructure. According to Echelon, "The system provides an open, bidirectional, and extensible infrastructure that enables a comprehensive range of utility applications that can bring benefits to every aspect of a utility's operation, from metering, to customer services, to distribution operations, to value-added services. Unlike systems with a dedicated radio per metering point, multiple NES meters can share a single IP connection through the use of Echelon's proven standards-based power line networking technology, driving down the per-point connection cost and enabling the system to easily and cost-effectively incorporate new wide area networking technologies over time."

Powerline broadband to bring Internet to Indian villages ***Broadband over powerline specialist, Corinex Communications, is to lead a project to provide Internet access to villages in India using BPL technology.***

BPL will be used to connect adjoining villages to the Internet using existing powerlines to transfer broadband Internet access. Corinex's BPL technology is one of the recipients of joint science and technology research awards and development initiatives between India and Canada, valued at more than \$US17 million.

The objective of this research and development project is to develop BPL technology to suit Indian conditions so the technology can be later deployed for large scale use.

Vancouver-based Corinex will work with the Indian Institute of Information Technology (Allahabad) in partnership with the Maple Leaf India Pvt Limited in New Delhi.

Ten villages are targeted to be completed approximately one year from the day work begins – subject to various factors. It is anticipated deployment will be completed in the villages, connecting about 3,000 users, within the next 18 months. During this period research and development will also be focused towards making this technology adoptable in India for intelligent grid, automatic meter reading, power management applications, etc.

China

Nokia Siemens wins \$US878m network contract from China Mobile ***Nokia Siemens Networks has won a Euro 550m (\$US878m) contract to expand China Mobile's network.***

Nokia Siemens Networks will design, build, maintain and optimise the radio and core network including supplying its energy efficient Flexi base station, mobile softswitching and OSS in provinces and cities across China.

Zhang Zhiqiang, head of Nokia Siemens Networks Greater China Region said: "Our solution is future proof since it allows a smooth migration to IP networks and is energy efficient; making it the right choice for China Mobile."

According to Nokia Siemens, its services experts will "ensure a successful network deployment and on time network launch and at the same time improve network reliability and availability. A tailored and optimised network design will help China Mobile to minimise the required network capital expenditure, gain a roadmap for network evolution and achieve full potential of the product for the best possible network performance. This will enhance operations and processes as well as China Mobile's competitiveness."

AsiaInfo to upgrade China Telecom WLAN & IP billing ***AsiaInfo Holdings has signed a contract with China Telecom to upgrade its wireless local area network (WLAN) system and IP billing system for Northern Telecom which covers nine provinces in northern China.***

This is the sixth consecutive year in which AsiaInfo has won the contract since 2002. According to Steve Zhang, AsiaInfo's president and CEO, "AsiaInfo's world-class OpenBilling system offers operators reliable, scalable features that accommodate increased subscriber growth. Moreover, the system offers the flexibility needed to adapt to a diversified business model that now includes broadband, fixed line and mobile businesses - an important requirement for China Telecom as it expands into mobile services."

Under the terms of the contract, AsiaInfo will upgrade the WLAN system to comply with China Telecom's WLAN 2.0 specifications, enabling it to accommodate broadband, fixed line and mobile operations. The new IP billing system will feature enhanced business management and back-office support functions, the capacity of which will be expanded to support approximately five million users.

NASDAQ-listed AsiaInfo became a prominent supplier of IT security products and services in China with the acquisition of Lenovo's non-telecom related IT services business in 2004. It began operations in the United States in 1993 but moved major operations to China in 1995 and played a significant role in the construction of the national backbones and provincial access networks for all of China's major national telecom carriers, including China Telecom, China Mobile, China Unicom and China Netcom.

ChinaTel installs wireless broadband net in Beijing

ChinaTel Group says it has completed the installation of the first phase of a wireless network to provide Internet access in Beijing.

The network covers 100 square kilometres of metropolitan Beijing, including the 2nd Ring, 3rd Ring, CBD commercial zone, financial district, Zhong-Guan village, Wangjing economy-technology development zone, Xuanwuchun village and Yizhuang.

ChinaTel Group acquired telecommunication engineering and construction firm Trussnet USA in May, 2008. Trussnet is a party to contracts with CECT-Chinacomm Communications Ltd, a licensed Chinese telecommunications provider, under which Trussnet will engineer and install a next generation wireless Internet access network that brings high-speed wireless broadband services to mainland Chinese residents, businesses and government agencies.

The contracts provide for Trussnet to be the exclusive contractor for the 29 city China infrastructure project. The proposed network, being constructed by Trussnet is a WiMAX and Mesh WiFi network. Wireless broadband services will be provided in the 3.5GHz band that the Chinese government has granted use to Chinacomm for its WiMAX broadband services.

NTT DoCoMo sets up Chinese subsidiary

NTT DoCoMo has established a subsidiary in China to focus mainly on providing mobile solutions for corporate customers, especially locally based Japanese companies.

The company, DoCoMo China Co Ltd, will have its office in Shanghai and is expected to begin operating from the end of July, once the necessary governmental and commercial approvals have been obtained. NTT DoCoMo has named Yoshimune Ishii as general manager, but says this is subject to confirmation.

Bangladesh

The Bangladesh Government is to auction three nationwide spectrum licences for mobile WiMAX: two in the 2.3GHz band and one at 2.5GHz.

No entity will be allowed to hold more than one licence and existing mobile operators will not be allowed to bid. Foreign companies and non-resident Bangladeshis will be permitted to hold up to 60 percent equity in a winning bidder.

The licences will be auctioned in two stages with a reserve price of taka 250 million (\$US3.5m) in the first, sealed bid stage. The top ten bidders in this stage will then go on to the second open outcry auction in which the reserve price will be the highest price bid in stage one. The ultimate highest bidder will be able to choose which licence they want.

Operators will be required to deliver at least 128kbps to all users: fixed. Nomadic and fully mobile. They will also be allowed to provide VoIP services. Each licence will consist of 30MHz of contiguous unpaired spectrum.

ISP that already hold licences to operate in 2.3, 3.5, 5.2, 5.4GHz and 700MHz bands will be allowed to continue their wireless Internet services for five) years with pre-WiMAX equipments which they have already imported but will not be allowed to provide mobile WiMAX services and will not be allowed to import/replace equipment supporting their existing services.

Licensees will pay an annual license fee taka 30m (\$US0.44m), four percent of gross revenue in each of first two years and five percent in subsequent years. They will also pay an annual spectrum charge and must lodge a taka 150m (\$US2.2m) bank guarantee.

Vietnam

Vimpelcom enters Vietnam mobile market

Russian telco, VimpelCom is to set up a mobile operator joint venture in Vietnam with Global Telecommunications Corporation (GTEL), a Vietnamese state-owned enterprise, and GTEL TSC, a subsidiary of GTEL.

VimpelCom will invest \$US267m and will hold 40 percent of the joint venture. GTEL and GTEL TSC will have 51 percent and nine percent respectively.

VimpelCom CEO, Alexander Izosimov, said: "With a population of 86 million and a fast growing economy, the Vietnamese market holds great promise for VimpelCom and we believe the GTEL-Mobile growth dynamics make it an ideal place for us to begin building our international growth platform...This is a first-of-a-kind transaction in Vietnam, so we will work alongside our partners to ensure that we build a strong business to capture the revenue opportunities".

m2m to sell VoIP and Internet in Vietnam

Profit Way Technology, a subsidiary of Australian Stock Exchange listed m2m Group, has signed an agreement with Vietnam's government-owned VTC Wireless Broadband Company that it says will enable it to sell VoIP and Internet services to over 9.3 million existing subscribers.

These currently pay for other services provided by VTCW. This revenue/profit sharing agreement replaces the reseller agreement announced in January 2008.

m2m says that market research conducted in conjunction with PWT shows that the average spending on similar services is between \$US4-\$US8 dollars per month per subscriber. m2m CEO, Michael So, said: "All systems are in place to commence immediate sales of our products and services to this large subscriber base. Our team has installed and tested the necessary equipment and software, and the translated website and softphone are near completion in the Vietnamese language. Marketing collateral and pricing plans have also been finalised ready for the launch of the service and products under the white label brand of aloVTC."

Sri Lanka

I-root DNS server installed in Colombo

The Asia Pacific Network Information Centre (APNIC) has set up a mirror of the Internet root server i.root-servers.net in Colombo in conjunction with Netnod/Autonomica AB.

It will be the first root server to be deployed in Sri Lanka and, according to APNIC, will bring significant improvements in speed and reliability to Internet users in Sri Lanka and the surrounding region.

The installation has been carried out by Autonomica, the organisation responsible for the I-root server (one of the 13 root servers in the world) and which has over 30 instances around the globe. Deployment has been made possible with financial and logistical assistance from Sri Lanka Telecom and APNIC. It brings the total number of DNS root servers in the Asia Pacific region to 36 of which 22 have been made possible with APNIC's support.

Kurt Erik Lindqvist, CEO of Netnod/Autonomica, said: "This root server will not only benefit the Sri Lankan Internet community, but also Internet communities in the surrounding region, in terms of faster domain resolution and increased resilience within the region. This installation is part of Autonomica's effort to increase the I-root server footprint and thereby increasing the performance and robustness of the root server system worldwide."

APNIC director general Paul Wilson added: "The deployment of this root server in Sri Lanka is a positive example of Internet multi-stakeholder coordination. The installation has involved the private sector, not-for-profit organisations, and government bodies working together to improve DNS stability and Internet response times for developing countries in South Asia".

Philippines

Clarity extends OSS role at Globe

OSS developer, Clarity - a subsidiary of Australian Stock Exchange listed Powerlan - has won an extension to its contract with Philippines telco Globe Telecom to provide configuration management for 2G and 3G wireless networks.

Clarity has been working with Globe to provide inventory management and service assurance and was also commissioned to build a new network operations centre which included the implementation of NOC infrastructure and associated NOC tools to improve network performance, fault management and customer experience.

According to Clarity the expanded solution will provide a useful tool for change management, resulting in improvements in data integrity. Clarity will also provide a pre-integrated solution covering inventory management, alarm management, performance management, trouble tickets and SLA management, for Globe's convergent fixed line business, Innove Communications, which consists of both next generation and legacy networks, supporting services such as voice, data and IP services including VoIP, DSL and IP VPN to residential and enterprise customers.

New Zealand

Telecom NZ picks AlcaLu to build IP net, again

Telecom New Zealand has awarded Alcatel-Lucent a \$NZ130m contract to build a nationwide IP network that it says "will bring voice, Internet and mobile telephony services together onto one integrated technology platform."

The contract will run until December 2009, by which time Telecom NZ says it expects to be able to launch the first 'proof of concept' products on the new network. That Alcatel-Lucent won this contract should come as no surprise. Several years ago Telecom NZ outsourced most of its network operations to Alcatel in a contract the scope of which, at the time, went well beyond what any other major telco had undertaken in network outsourcing deals. A deal similar in scale and scope covering outsourcing of the mobile network was awarded to Lucent Technologies. Since then, fortuitously perhaps for Telecom NZ, Alcatel and Lucent have become one.

Under this new contract, Alcatel-Lucent will partner with Telecom's Technology and Shared Services division to build and implement the next generation network, and will focus on the voice calling and broadband Internet components of the new national network.

Telecom NZ's chief transformation officer, Frank Mount, was talking up the deal, saying: "Building this next generation network infrastructure is yet another example of the massive programme of transformation currently underway at Telecom, which complements other significant programmes of work including, fibre to the node, the mobile phone network upgrade, the next generation Telecom retail transformation and operational separation."

Curious that he never mentioned another significant, \$NZ220m, IP network contract awarded by Telecom NZ to Alcatel in September 2005, which on a simple reading of

the announcements sounds remarkably similar to this latest deal. However, a Telecom NZ spokesman told *ExchangeAsia* this week that the new contract was for an IP core network whereas the earlier contract was for the edge network and included the new access network. He was unable to give any details of what the new core network comprised.

Telecom NZ said, in September 2005, that, with Alcatel, it had "embarked on the rollout of a new voice technology that will revolutionise New Zealand's telecommunications infrastructure...Telecom will invest \$NZ220 million in new network and system capability to support next generation services. The first residential customers will migrate onto the new network by early 2007 and eventually all of New Zealand's 1.7 million customer lines will be transitioned to the new platform in 2012." The project was described as "a critical milestone in the multi-year, \$NZ1.4 billion transition to a totally new network platform that will deliver triple play (voice, data and video bundle) services."

Pan Asia

Sybase takes over C&W global mobile roaming

The two part deal is expected to make Sybase 365 the world's largest provider of mobile data roaming and lead to new inter-carrier services.

In a two part deal Sybase 365 will become the exclusive service provider of C&W's GPRS exchange (GRX) which uses C&W's global MPLS network and which supports SMS messaging and mobile Internet access services when mobile users travel outside their home country. However ownership of the technology and the underlying network will remain with C&W.

In a separate deal, Sybase 365 has bought C&W's MMS hub which provides for inter-carrier deliver of 3G multimedia messages (ie images and video). Sybase 365 already operates its own global GRX and an MMS hub servicing US domestic carriers. Marty Beard, president of Sybase 365, told *Exchange* that the deal would enable Sybase's international operator customers to deliver MMS messages to cellphones on US networks and its existing North American operator customers to reach over 250 operators worldwide.

The GRX deal makes Sybase the world's largest GRX provider with 73 direct operator customers. It has 17 peering agreements which extend its GRX reach to almost 500 mobile operators. The MMS deal makes it the world's largest international MMS interoperability provider with direct peering agreements with 40 customers and reach to over 250 mobile operators. Sybase 365, a subsidiary of Sybase, claims to process more than 100 billion messages per year and to reach more than 700 mobile operators and 2.4 billion subscribers around the world.

Beard explained that international inter-carrier MMS was at present fairly limited because different operators use different codecs and any MMS roaming service must provide transcoding between these. He said that MMS roaming even between the networks of transnational operators Hutchison and Vodafone was "not as widespread as you might expect."

Beard said that it would take time to integrate the C&W systems with Sybase 365's existing systems but he expected the integration to be completed by year end. Down the track he said that Sybase 365 hoped to leverage the increased reach of its MMS network to offer, in conjunction with operators, new high value services across different networks, such as video sharing, that are not possible today.

When asked if the deal might have any impact on the notoriously high prices end users pay for international mobile roaming services, Beard was non-committal saying, "we haven't talked about pricing."

Fibre broadband uptake exceeds cable

According to broadband market research firm, Point Topic, in Q1 2008 the number of fibre optic broadband added exceed new cable subscriptions for the first time, and the cost per megabit of bandwidth is a fraction that for DSL services.

It says there were 2.5 million cable broadband subscribers added worldwide in the first three months of 2008, but more than 4.2 million new fibre users. It says that the growth in fibre numbers is being driven by China, Japan and South Korea where cable and DSL are losing subscribers to the fibre technologies. While in the US, UK, France and Germany low availability means low adoption.

Point Topic CEO, Oliver Johnson, hailed the result as "a significant milestone for fibre optic broadband, saying that, while there have been doubts expressed that consumers would find additional speed necessary or attractive the evidence suggests otherwise, and that prices plays a significant factor in their choice.

"If you look at the cost per megabit then DSL comes in at around \$US20 per megabit per month taking global averages. Cable does better at roughly \$US12 but they are both completely eclipsed by fibre where costs can get as low as 50 cents per megabit per month," Johnson said. "While there are sizeable variations from country to country, region to region and operator to operator a rule of thumb is that DSL can cost the consumer more than 15 times as much as fibre to get a megabit of bandwidth and cable is seven times as expensive given the current tariffs. "There are problems in the deregulated markets when it comes to major infrastructure investment. Fibre deployment is expensive and in the US and Europe there are significant regulatory hurdles to overcome," said Johnson.

"It's difficult to persuade operators to make the sort of commitment needed when they can't guarantee their returns. In most western markets regulators frown on monopolies and it's very difficult to sanction government expenditure given the self-imposed legal frameworks."

AsiaPac broadband subs up 30 percent in a year

Frost & Sullivan has forecast Asia-Pacific's broadband subscriber base to reach 171 million by the end of 2008, representing a year-on-year growth of 31.5 percent and a household broadband penetration rate of 19.7 percent.

According to F&S, "The surge in demand for broadband is driven by the growing popularity of video-on-demand, multi-player online games, video content sharing and social networking services such as YouTube and Facebook, as well as the aggressive push by operators to offer innovative bundled triple- and quadruple-play services."

F&S expects the broadband subscriber base to reach 321.8m by end-2013. It says total broadband revenues in Asia-Pacific stood at \$US28.1b in 2007 and expects thee to reach \$US42b by end 2013, growing at CAGR of 7.1 percent (2008-2013).

The countries with the highest household broadband penetration rates in 2007 were South Korea (90.8 percent), Hong Kong (83.8 percent), Taiwan (76.8 percent), Singapore (73.1 percent), Australia (63.2 percent) and Japan (57.8 percent). India and Indonesia registered the lowest penetration rates at 1.4 percent and 0.57 percent respectively.

BT brings fixed-mobile converge Asia Pacific corporates

BT has unveiled plans to launch BT Corporate Fusion, a fixed mobile convergence offering for corporate customers in Australia and other Asia Pacific markets.

BT claims that Fusion frees an organisation "from the hassles of having to manage multiple fixed and mobile communication technologies...With one business number

and one voice mailbox for communication wherever they are, the employees can be reached by colleagues, customers and business partners far more easily."

According to BT, "corporations with offices in different countries equipped with BT Corporate Fusion will potentially be able to reduce costs as employees travelling between different offices can use mobile devices to access the local corporate network (wireless LAN + MPLS) for making international calls instead of relying on outside roaming support. For employees, a single mobile device supports their communication within and outside the office."

The BT Fusion offering is "a completely client-based solution supports both GSM and CDMA settings and is PABX vendor and mobile operator agnostic, meaning that it is not tied to any specific manufacturers' mobile handset models."

End-users can use existing phones as long as they are BT Corporate Fusion-compliant and BT says companies do not have to invest heavily in equipment and related set up or manage handset inventory. "Using prevailing Wi-Fi technologies to interface with the fixed network and with WAP/GPRS/Bluetooth/Wi-Fi to regularly keep the handset clients up to date, BT Corporate Fusion promises fast and seamless communication support to end-users, with minimal user disruptions."

BT intends to roll out Corporate Fusion throughout Asia Pacific. Initial markets will be Singapore, Hong Kong, Australia and Korea.

Nortel names new Asian leaders

Nortel has named Jackson Wu and François Lançon as the new leaders of its Greater China and Asia Pacific regions respectively.

Their appointments follow Nortel's announcement in April 2008 that Michael Pangia - formerly president of a combined Asia region - would return to North America as senior vice-president, global sales operations and strategy. Wu and will continue to be based in Beijing and Singapore respectively.

Wu, a 15 year Nortel veteran, has led the Greater China team since August 2006. Lançon, who previously led Nortel's enterprise solutions business for the Asia region, will be responsible for the ASEAN countries of South East Asia, Australia and New Zealand, India, Pakistan and Japan.

"The changing nature of the Asian marketplace has been key to the decision to appoint two leaders," said Bill Nelson, Nortel's executive vice president, global sales. "Over the past several years, Greater China has emerged as a global economic power. The region's importance to Nortel's global portfolio and go-to-market strategies has also grown, and with the significant opportunities which exist across the Asia Pacific region, the direct engagement of leaders within Asia geographies is increasingly important to Nortel's success."

Pacnet adds for US PoPs

Pacnet (the entity formed from the merger of Asia Netcom and Pacific Internet) has completed four new PoPs in the US - in New York, Chicago, Dallas and San Francisco - taking the total to nine.

"The new interconnections will enhance our ability to serve US-based multinational corporations over our leading edge infrastructure, so that they can seamlessly connect with customers, partners and their rapidly expanding operations in Asia," said Wilfred Kwan, CTO of Pacnet. "We plan to continue expanding our presence by adding more PoPs around the world in the near future, to meet the growing demand for connectivity to Asia."

He added: "The extension of Pacnet's PoPs on the US West Coast is an integral part of our trans-Pacific strategy which also enables our planned EAC-Pacific subsea cable

to gain enhanced access into the US." EAC-Pacific is part of the \$300 million Unity cable that will connect Chikura, Japan and the west coast of the US.

In addition to the San Francisco interconnection, Pacnet already has four other PoPs on the west coast of the US which also serve as international gateways and are major IP Transit locations for its network.

Technology

A ten fold increase in submarine cable capacity?

Southern Cross Cable network has installed technology from Nortel which has significantly increased the capacity of the US terrestrial component of its network and in all likelihood could be applied to the entire system.

The optical fibres in Southern Cross carry data in multiple wavelengths or 'colours' of light. When it was installed each wavelength carried 2.5Gbps of data. This has since been increased to 10Gbps, but the Nortel technology operates at 40Gbps and Nortel is trialling another version that operates at 100Gbps.

Application of the 40Gbps or 100Gbps technology to all the wavelengths on a fibre has the potential to increase capacity four or 10 fold from that of a 10Gbps system but Ryan Perera, head of metro ethernet networks for Nortel Asia, said that optical signal transmission limitations in the fibre, such as dispersion, would limit its application to about 20 percent of the wavelengths available for 10Gbps transmission.

Even so, such a means of achieving a significant increase of capacity on an existing system for much less cost than a new system could compromise the business case for new systems, or lead to a glut of capacity and subsequent price collapse.

According to Dean Veverka, VP operations for Southern Cross, "Nortel's technology gives us a simple, cost-effective upgrade to 40Gbps and an equally simple upgrade path to 100Gbps in the future. We are also looking at the potential for this 40Gbps technology to be deployed on our longer distance submarine segments.

The 40Gbps product became generally available only six weeks ago but Nortel has already signed up 14 customers according to Perera. In Asia Nortel has seven trials underway and more planned. Veverka told *ExchangeAsia* that if the equipment performed successfully on the terrestrial component, Southern Cross would install it in one of the submarine links in its network - which comprises a figure of eight loop with two links from Australia to Hawaii via New Zealand and two from Hawaii to the US west coast.

Perera said that Nortel also had about five trials of the 100Gbps technology in place and was planning one soon with an Australian carrier. He was confident that the 40Gbps technology would be able to perform satisfactorily on the subsea component of the Southern Cross network, saying it was already in place on a South American cable network where it is carrying 40Gbps of traffic over distances of 4700kms.

According to Perera Nortel has been developing the technology for about six years, and it works by using a different modulation technique to encode the data onto the light signal. The technique, known as DP-QPSK is widely used in RF data transmission and Nortel has adapted it to the optical realm to encode data on four different planes of polarisation of the optical signal. Southern Cross, and many other long haul cables, use optical amplifiers not regenerators to boost the signal under the ocean and the 40Gbps signal is passed and amplified in exactly the same way as a 10Gbps signal.

Photonics breakthrough promises faster Internet

A photonic switching breakthrough by University of Sydney scientists is being hailed as having the potential to make the Internet 60 times faster.

According to the university "It will mean almost instantaneous, error free and unlimited access to the Internet anywhere in the world." However, it will do nothing for bandwidth limitations in the access network: the problem that Australia's controversial National Broadband Network aims to alleviate.

The state-of-the-art electronic switching technology in use in today's routers and switches operates at 10gbps. The University of Sydney's photonic switching technology holds the promise of being able to route and switch Internet traffic as optical signals at the rate of 640Gbps.

It has been developed by CUDOS (Centre for Ultra-high bandwidth Devices for Optical Systems) and details were announced by CUDOS director, professor, Ben Eggleton, in a paper presented to the Opto-Electronics and Communications Conference (OECC) in Sydney.

Eggleton said "This is a critical building block and a fundamental advance on what is already out there. We are talking about networks that are potentially up to 100 times faster without costing the consumer any more." He explained that "What we are doing is taking a very fast 640gbps signal and switching out every 64th bit."

The technology is the result of a scientific collaboration between CUDOS teams at the University of Sydney and the Australian National University and the Technical University of Denmark, with the support Australian Research Council (ARC) funding.

Eggleton told *Exchange*: "In the last few years we have started to get to the limit of electronic switching. What we have demonstrated is well beyond what is possible in electronics. It is a heroic result and demonstrates that these sorts of speeds are viable in next generation networks."

He estimated that it would likely take another five years of research and considerably funding to develop the technology into a commercial product. "There are a number of significant challenges of device integration, packaging and reliability, but the market is not yet ready." He added that this would require support from both major equipment manufacturers and government.

Eggleton, a graduate of the University of Sydney is a former technical manager of the Optical Fibre Grating group at Bell Labs and former research director of the Specialty Fibre Business Division of Bell Lab's parent, Lucent Technologies (now part of Alcatel-Lucent).

Symbian Foundation attracts new members

The Symbian Foundation, the new body set up to promote and develop the Symbian handset operating system, has added 11 members, including global mobile operator 3.

The new members are mobile operators 3, América Móvil and TIM, semiconductor manufacturer Marvell plus services and software providers Aplix, EB, EMCC Software, Sasken and TietoEnator. The Symbian Foundation claims that since plans for its formation were announced, more than 150 organisations have registered their interest in joining via the website at www.symbianfoundation.org.

Plans for the Symbian Foundation were announced on June 24 by the initial board members; AT&T, LG Electronics, Motorola, Nokia, NTT DoCoMo, Samsung Electronics, Sony Ericsson, STMicroelectronics, Texas Instruments and Vodafone, together with Symbian Limited. A key to the foundation is the decision of Nokia to acquire all shares in Symbian Ltd and donate the intellectual property in Symbian to the foundation.

The acquisition of Symbian Limited by Nokia is expected to close in Q4, 2008. After that assets to the foundation will include the Symbian OS and the S60 Symbian based software from Nokia, UIQ technology by Motorola and Sony Ericsson and MOAP(S) by NTT DoCoMo and Fujitsu. This contributed software will be available under a royalty-free license to foundation members from the first day of Symbian Foundation operations, expected 1H 2009.

The Foundation says it will work to unify the platform, with the first unified foundation release expected in 2009 and will make the platform available in open source by June 2010 (two years from the Symbian Foundation announcement).

"We were delighted with the broad support for plans for the Symbian Foundation", said Kai Öistämö, executive vice president, devices at Nokia, on behalf of the initial board members. "We believe that this is a significant move for our industry and are pleased that these additional market leaders agree and are giving their support to the initiative."

"3 is pleased to support the Symbian Foundation and believe this is a significant development in open mobile software platforms", said Fergal Walker, director of products at 3 UK. "We believe that this initiative will provide an excellent opportunity to expand the range and quality of services for our customers."

- **Symbian revamps developer programme**

Symbian Limited, the company behind the Symbian mobile phone platform and soon to be acquired by Nokia - has launched a new partner program that it says will enable members to innovate more easily, collaborate more closely with the Symbian ecosystem and accelerate developments with Symbian OS.

Membership of the new programme is offered at a reduced annual fee of \$US1,500 compared to \$US5000 previously and, according to Symbian, "focuses on harnessing innovation by further strengthening the ecosystem, helping its members and customers to build compelling devices more quickly and at a lower cost."

"Symbian customers enjoy access to the highest quality ecosystem solutions, while members make use of a range of technical, marketing and business development tools and resources, including the Symbian OS Binary Access Kit," Symbian said.

Members of the Symbian Partner Network also benefit from access to SDN++, Symbian's private developer network portal, which contains an exclusive SPN Zone and offers self-service technical support via forums, wikis and a dedicated request management system as well as collaboration 'zones'.

UWB tipped to take on bluetooth

Ultra Wideband (UWB) technology is being touted as the best wireless technology to facilitate the need for high speed data transfers between mobile devices while consuming very little power.

According to a new report from Frost & Sullivan, "UWB can free devices from wires, enabling wireless communication...It can enable data transfer speeds of up to 480 Mbps at a total maximum transmit power of around 0.1mW. This is significantly less than for comparable radios such as bluetooth, which has a typical transmit power of between 10 and 100mW. Backed by the WiMedia Alliance, UWB technology has garnered attention from mobile device manufacturers in the past few years and is slowly emerging as a strong competitor to Bluetooth and Wi-Fi."

Frost & Sullivan research analyst Achyuthanandan Sampathm said: "UWB is gaining a lot of mileage and is slowly being implemented in laptops and notebook PCs. It is anticipated to penetrate into PMPs and other small-sized mobile devices soon and could potentially dominate the mobile devices market once it is integrated in mobile phones."