CALENDAR OF EVENTS
March 2006

30 March 2006

Logistics ICT in Singapore

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Venue: Raffles City Convention Centre
Time: 8.30am - 5.00pm

For more information please contact:
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iDA SINGAPORE

The Infocomm Development Authority of Singapore (IDA) is committed to growing Singapore into a dynamic global infocomm hub. IDA uses an integrated approach to developing info-communications in Singapore. This involves nurturing a competitive telecoms market as well as a conducive business environment with programmes and schemes for both local and international companies.

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iDA SINGAPORE

IDA's pavilion at 3GSM, Barcelona

IDA LEADS SINGAPORE FIRMS TO 3GSM WORLD CONGRESS

A GROUP OF SINGAPORE wireless and GSM innovators, led by IDA, recently attended the 3GSM World Congress in Barcelona, Spain. Billed as the world's biggest mobile communications conference and exhibition, the 2005 event attracted 34,000 visitors from more than 171 countries, with more than 600 exhibitors and 1,200 media and analyst visitors.

As a small but densely populated country, Singapore is strategically placed to take advantage of innovations in technology and communications and it has long prided itself on being a leading IT adopter. For instance, 700 public wireless hotspots in cafes, public buildings and fast food outlets are found nationwide, with over 200 of these located within Singapore's Central Business District (CBD). Furthermore, Singapore's technology talent pool accounts for over 5 percent of the nation's workforce, amounting to 108,000 workers.

The companies that attended the 3GSM World Congress from Singapore included:

1. Agis Pte Ltd, a Singapore-based, Geographic Information Systems (GIS) company.
2. I'M Technologies Ltd, one of Asia's leading SIM, RUIM and USIM smart card companies.
3. Innvo Systems Pte Ltd, a provider of cost effective and integrated mobile software solutions for mass market feature phones.
4. Oswin Technology Pte Ltd, which provides full turnkey design and manufacturing of wireless telecommunications products comprising of GSM/EDGE PDA, Bluetooth PDA and Smart Phone as well as Wi-Fi and 3G wireless multimedia products.
5. Radixs Pte Ltd, which owns and licenses the flagship Motion eXperience Interface (MXI), a network and telco-centric universal platform encompassing an array of intuitive technologies that support and enable legacy applications and content natively.
6. Telogic Pte Ltd, a solutions enabler for the telecoms industry with its open and flexible telecoms network management solution and mobile value added solution suites.

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INFOCOMM NEWS FROM IDA

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INFOCOMM INTERNATIONAL ADVISORY PANEL CONVENES

THE INFOCOMM DEVELOPMENT AUTHORITY OF SINGAPORE (IDA) has put together the Infocomm International Advisory Panel (IAP), a high-level panel of strategic advisors, comprising leaders and visionaries of the infocomm industry.

The first IAP meeting convened on 13 March 2006. The focus of this meeting was on the changing landscape of infocomm in Asia, where Asia is positioning itself as the future global economic centre.

The IAP is chaired by Mr Lim Swee Say, Minister, Prime Minister's Office, who has had a long association with the development of information technology in Singapore since the 1970's. During his tenure as Chief Executive and subsequently Chairman of the then National Computer Board (NCB), Mr Lim spearheaded the formulation and implementation of Singapore's National IT Plan and IT 2000 Masterplan, transforming Singapore into one of the most IT intensive nations in the world.

The members of the IAP are:

1. (Chairman) Lim Swee Say, Minister for Prime Minister's Office
2. (Moderator) Kishore Mahbubani, Dean, Lee Kuan Yew School of Policy
3. William Green, Chief Executive Officer, Accenture
4. Dr Edward Suning Tian, Chief Executive Officer, China Netcom Group Corporation
5. John T. Chambers, President and Chief Executive Officer, Cisco Systems, Inc
6. Koh Boon Hwee, Chairman, DBS Group
7. Carl-Henric Svanberg, Chief Executive Officer, Ericsson
8. Naoyuki Akikusa, Chairman, Fujitsu Limited
9. Ann Livermore, Executive Vice President, Technology Solutions Group, Hewlett – Packard
10. Nicholas M. Donofrio, Executive Vice President, Innovation and Technology, IBM Corporation
11. N.R. Narayana Murthy, Chairman and Chief Mentor, Infosys Technologies Limited
12. Craig Mundie, Senior Vice President, Chief Technical Officer, Advanced Strategies and Policy, Microsoft
13. Akinobu Kanasugi, President, NEC
14. Cynthia A. Stoddard, Group Chief Information Officer, Neptune Orient Lines
15. Simon Beresford-Wylie, Executive Vice-President & General Manager of Networks, Nokia
16. Charles Phillips, President and Board Member, Oracle Corporation
17. Dr Gottfried Dutinè, Executive Vice President, Royal Philips Electronics

JAVAJIVE TO LIVEN UP LOCAL TECHNOPRENEURSHIP

IN LINE WITH Singapore's infocomm technology masterplan Intelligent Nation 2015 (iN2015), and as an extension from Sun Tech Days 2006, Sun Microsystems has initiated a challenge to boost the cultivation of technopreneurship among Singapore's community of young developers with the launch of JavaJive, the Technopreneur Challenge. JavaJive is open to all infocomm students from local polytechnics and ITE colleges.

Launching the event at ITE College East was IDA's CEO, Mr Chan Yeng Kit. In his opening address, he reminded students of the marvels of infocomm and how technology has seen us progress from typewriters to PCs. In a country like Singapore, he added, infocomm technology is also what gives Singapore workers an edge over lower-cost competitors in Asia.

Previous competitions like Java Jam were more focused on creating wireless applications particularly with regards to mobile gaming. JavaJive on the other hand, is more about developing an IT application and business plan that addresses specific business objectives or improves business functions.

Students participating in the JavaJive will be able to work in a team of up to four members and will have more than a month (24 February to 14 April) to complete their work. The IT application and business plan they submit must map out how their application can be used in any industry, address specific business objectives or improve business functions while making effective use of NetBeans, Java Enterprise Studio (JSE) and Solaris features.

IDA hopes that this competition will help spur students to create their own intellectual property. "IDA is proud to support this along with other student outreach programmes to work towards our goal of having an infocomm-savvy workforce in line with our 2015 vision," said Seah Lye Khim, Director of Manpower at IDA.

Sun expects about 100 teams to participate in the challenge. There will be nine $500 cash prizes for the teams that demonstrate the best use of technology, best effort, best presentation, creativity, innovation, business relevancy, usability, quality and process. The top team will win a grand prize of $1,000 plus a trip to the largest Java developer event in the world – JavaOne, which will be held at the Moscone Center in San Francisco from May 16 to 19 this year.

SINGAPORE'S BROADCASTING FUTURE LOOKING BRIGHT

THE ECONOMIC DEVELOPMENT BOARD (EDB) and Alcatel have jointly announced the launch of a new competency centre dedicated to Internet Protocol Television (IPTV) and triple play in Asia Pacific. The aim of the centre is to focus on activities that contribute to the development of Singapore as a regional IPTV and triple play hub.

With the rise of broadband penetration across the region comes an increasing number of telecom operators looking to provide IPTV services and the triple offerings of voice, video and data. In the Asia-Pacific region, Alcatel says that the number of telcos looking to or which have launched IPTV projects stands at around 30 percent in countries such as Japan and Hong Kong. Alcatel is also involved in such projects with Taiwan's Chunghwa Telecom and China Netcom. In Singapore, local telco SingTel is currently reviewing its IPTV plans, while in June, Nasdaq-listed Amaru Inc is set to take on cable TV incumbent StarHub when it introduces a 40-channel interactive TV service.

Recognising the need for skilled talent to implement and drive IPTV adoption across the region, one of the competency centre's first initiatives will be to train IPTV technology specialists. Ten professionals will undergo 25 weeks of training in IPTV technologies locally and at Alcatel's subsidiaries in Europe and the United States, said Oliver Foo, Managing Director of Alcatel Singapore.

The Managing Director of EDB, Mr Ko Kheng Hwa is pleased that Alcatel has selected Singapore to drive its IPTV initiative in Asia Pacific. "Alcatel's IPTV competency centre will leverage on Singapore's established broadcasting and telecommunication capabilities and expand its IPTV business into the region," said Mr Ko. "Through partnerships with industry leaders like Alcatel, the EDB is committed to growing the pool of skilled IPTV specialists, which will strengthen Singapore's position as a leading next-generation info-communications hub."

ECITIZEN PORTAL AWARDED FOR MOST POPULAR GOVERNMENT SERVICES WEBSITE

AT THE RECENT Hitwise Online Performance Award, the www.ecitizen.gov.sg portal won an award for the most popular government services website. Hitwise, an online competitive intelligence service, measures performance of websites based on market share of visits from Internet users in a local market. Singapore's first ever online awards were awarded to the most popular industry websites of more than 160 different industries.

Measurements were based on the Internet usage of over 1.5 million Singapore Internet users visiting over 10,000 local websites during 2005. The Awards were organised by online competitive intelligence service Hitwise, along with sponsors AdAsia and Yahoo!, and monitored Internet usage drawing on raw data and figures from ISPs.

The awards themselves showed some interesting trends amongst Singapore's Internet users. Music download website www.soundbuzz.com.sg, was the most popular Shopping and Classifieds website.

Yahoo Singapore was a big winner with eight awards. According to Reza Behnam, Managing Director, Yahoo! Southeast Asia, "It's a great honor to see eight Yahoo! properties, including www.yahoo.com.sg, being recognised and endorsed by the community as the most locally relevant Internet destinations in Singapore."

www.ecitizen.gov.sg was the most popular winner in the 'Government - National 'category. The eCitizen portal brings e-Government to the citizens of Singapore by allowing them to access government services online.

According to Mr Lo Yoong Khoong, Deputy Director, Electronics Services of IDA who collected the award, "We are most heartened that the eCitizen portal is ranked top amongst the Government websites in Singapore. The high visit rate to the portal is testimony to the commitment and efforts put in by the Singapore Government to provide customers with a single access point to all government services and information, covering all essential touch-points in a citizen's life conveniently."

Mr Lo Yoong Khong (right), Deputy Director, Electronic Services, IDA receiving the award

SIX NEW MEMBERS WITH DIVERSE EXPERTISE APPOINTED TO IDA BOARD

THE INFOCOMM DEVELOPMENT AUTHORITY (IDA) has recently appointed six new members to the IDA Board. The new members include four industry leaders and two public sector officers. The 17-member Board will guide the work of IDA and help shape Singapore's Infocomm landscape. The six new appointments are:

1. Mr Frank Allan Brown, Director, Colorzip SEA Pte Ltd. Prior to this appointment he was the President of MTV Networks Asia Pacific. Mr Brown is also on the board of the Media Development Authority and the Singapore Tourism Board.

2. Mr Chew Hock Yong, Deputy Secretary, Ministry of Community Development, Youth and Sports. Mr Chew is a founding member of the Singapore Sports School and also serves on the board of the Singapore Sports Council, the National Council of Social Service, the National Volunteer & Philanthropy Centre and SISTIC.com.

3. Mr Charles Lim Aeng Cheng, Principal Senior State Counsel, Attorney-General's Chambers. He is also serving as Deputy Chairman of the LawNet Management Committee, Chairman of the National Internet Advisory Committee's Legal Sub-Committee and member of the Bioethics Advisory Committee.

4. Mr Stephen Lim, Chief Executive Officer/Managing Director, SQL View Pte Ltd. He was awarded the National Youth Award for his entrepreneurial achievements in 1993 and started his career in Hewlett-Packard where he specialised in Office Automation (OA) and Networking.

5. Mr Seah Chin Siong, Country Managing Director, Accenture Pte Ltd. He has extensive experience in managing the planning, design and implementation of infocomm projects for large organisations and government agencies in Singapore, China, USA and Brunei.

6. Mr Tan Kian Chew, Chief Executive Officer, NTUC FairPrice. He served in the Republic of Singapore's Navy from 1976 to 1983 as Head of Naval Operations. He joined the Singapore Government's elite Administrative Service in 1983 and served in the Ministry of Trade and Industry.

Singapore Cruise Centre To Achieve Greater Operational Efficiency And Cost Savings Through Advanced IT

WITH 6 MILLION PASSENGERS passing through its terminals every year, Singapore Cruise Centre (SCC) is investing S$2.5 million in technology improvements to enhance its cruise and ferry terminal operations, bringing about higher operational efficiency, better customer service and security.

"With the rapid pace of technological change, the Singapore Cruise Centre is committed to provide our customers with state-of-the-art systems to increase our efficiency and productivity and also improve passenger clearance, convenience and comfort," says Mr Cheong Teow Cheng, President of SCC.

To bring vision to reality, SCC has contracted NEC Solutions Asia Pacific Pte Ltd (NESCAP) to provide it with Advanced IT services.

NECSAP will integrate leading-edge technology into SCC's operations, including implementing the region's first Radio Frequency Identification (RFID)-enabled boarding pass, and incorporating real-time information via SCC's existing web portal, www.singaporecruise.com. Upon completion, customers would be able to book tickets online, obtain cruise or ferry schedules, and enjoy fare promotions via e-newsletters. The combination of RFID technology and the Internet will also create a fully automated process for customers who buy tickets online, says Mr Cheong. Passengers will be able to perform an automated check-in via a self-service kiosk, enter the restricted zone and exit the boarding gate, through RFID-enabled turnstiles, and board the vessel.

An added benefit of using RFID passes is cost savings that SCC estimates to be about 92 percent. Current bar-code boarding passes in use are good for one-time use only and each pass costs S$0.03 (US$0.02). According to Mr Cheong, "The RFID passes are reusable, recyclable up to 500 times. With each card costing between S$1.20 (US$0.74) to S$1.30 (US$0.79), this works up to about a quarter of a cent per use."

The project is being completed in stages with full implementation expected by March 2007.

The Singapore Cruise Centre

ALEXANDRA HOSPITAL FIRST IN ASIA TO ENHANCE PATIENT CARE THROUGH CISCO SOLUTIONS

PATIENT CARE SERVICES at the Alexandra Hospital are set to reach a new level with the implementation of Asia's first advanced Medical-Grade Network solutions from Cisco Systems – The Clinical Connection Suite hopes to overcome challenges faced by hospitals such as bed shortages, delivery of medical information, and the location of patients and hospital assets.

The first component of the Clinical Connection Suite that Alexandra Hospital has implemented introduces a "just-in-time" approach to bed management that reduces waiting times for beds and increases efficiency in the utilisation of the hospital's 400 beds. "Our goal is to admit a patient who needs a bed within minutes," said Mr Liak Teng Lit, CEO of Alexandra Hospital. Currently, the hospital's patients wait an average of 20 to 80 minutes.

The healthcare industry is looking to improve efficiency and patient care in the face of challenges such as an aging population, fears of global pandemics like SARS and the bird flu as well as rising costs and expectations.

The Clinical Connection Suite is one of the first tangible business solutions that Cisco has developed as part of Cisco's Connected Health vision. Other components in the Cisco Clinical Connection Suite are Nurse Call, Patient Monitoring, Collaborative Care and Location-based Services. In the future, Alexandra Hospital can look forward to other solutions such as Location-based services which allow hospital staff to track mobile equipment and other key assets. For example, on average, nurses spend 30 percent of their typical 12-hour shift looking for the right equipment. With RFID-enabled Wi-Fi tags placed on hospital equipment, staff can instantly locate something as simple as a wheelchair or as important as an IV machine. This time saved means more time can be spent on patient care.

Alexandra Hospital is looking forward to making healthcare better, faster, cheaper and safer for patients. "We will work to enable our doctors and other healthcare professionals to diagnose, treat and advise our patients within the shortest time at the lowest possible cost. This is in line with Cisco's Connected Health which takes advantage of a powerful converged communications platform to connect healthcare providers to patients and their families," said Mr Liak

NO MORE PAGING FOR DOCTORS AT TTSH

IN THE FIRST EXCHANGE program of its kind in the region, Tan Tock Seng Hospital's (TTSH) 500 doctors traded in their pagers for mobile phones as part of a S$300,000 exchange program, partly funded by a S$120,000 grant from the IDA, in a move that is expected to improve the efficiency and response times of medical staff.

TTSH's study found that doctors were spending an average of 80 minutes a day returning calls while nurses spent between 40 and 200 minutes a day paging them. Now, rather than simply receiving a page with no information, the doctor is able to receive a text message containing the relevant information. The SMS messages sent to doctors will be integrated with the Computerised Clinician Order Entry (CCOE) system, a computer application that accepts clinician orders electronically through telecommunication devices.

Later this year, this text messaging system will also be linked to a new computerised ordering system so that doctors will be informed automatically when their patient's laboratory results are completed.

TTSH is working closely with SingTel and Nokia for the trial use of advanced mobile technology and a reliable service network in the medical industry. The goal is to significantly improve medication management between doctors and patients at the point of care through digital telecommunication devices. It is hoped that this will enhance the quality of care to patients and increase productivity amongst healthcare professionals.

According to Associate Professor Philip Choo, Chief of Medical Board, TTSH believes that the new system gives them the platform on which TTSH can transform the entire care process, making care for their patients faster, better, safer and cheaper.

Nurse Demonstrating Use of Wi-Fi Phone

40-CHANNEL INTERNET TV SERVICE TO BE LAUNCHED IN SINGAPORE

COME JUNE, Singapore's Internet Protocol TV (IPTV) viewers will have more than 40 channels of video-on-demand (VOD) content delivered to their television screens via broadband connection.

The service, called Global IPTV, will be launched in Asia and US by AMARU Inc. through its Singapore-based subsidiary M2B World Pte Ltd and its technology partner Zentek Technology Singapore. It has also announced the roll-out of the first 10,000 units of its set-top boxes in June 2006.

The Global IPTV service, targeted mainly for homes and families, expects to transform the living room television screen into an all-in-one utility for entertainment and communication powered by any broadband connection. When launched, viewers will be able to choose from channels offering blockbuster movies, Korean and Chinese dramas, comedies, documentaries, music, lifestyle, corporate training, and sports, all on demand.

Competing for viewers with incumbent StarHub, the new service will have slightly different features such as karaoke on-demand and the wireless set-top box will have video conferencing and video messaging features, as well as storage capacity for family photos and home videos.

Chairman and Chief Executive of Amaru, Mr Colin Binny said that pricing for the new service will be made affordable so that any broadband connected home can enjoy on-demand from 40 different channels of programming to suit both entertainment and education needs.

Mr Kazuo Yoshimura, Managing Director of Zentek Technology Singapore also said that they are excited to partner with M2B World to create this powerful synergy of rich media content offering and Zentek's advanced technology solutions to meet the growing demand of customers for interactive triple play – video, voice and data.

Amaru Inc and its M2B World subsidiaries target to ship 250,000 set-top boxes worldwide within this year.

WORLD'S FIRST SMS DIVERT TECHNOLOGY DEVELOPED IN SINGAPORE

MOST MOBILE PHONE users are familiar with the 'call divert' service. However, a new technology that diverts SMS messages is also available now.

With the help of three students, Nanyang Polytechnic (NYP) lecturer Mr Quan Ye Ming developed this world-first 'SMS divert' technology, which has already been incorporated into the latest Nokia Communicator 9300 and 9500 mobile devices. Mr Quan has successfully applied for the patent rights to the technology.

With this new feature, if a user leaves his mobile phone at home, he would still be able to receive SMS messages on another mobile device. However, both devices must already have the 'SMS divert' feature installed in them, and the technology is currently available only on the Symbian operating system.

The key differences between this 'SMS divert' service and the existing 'call divert' service are that the new feature is operator-independent; and it does not require reconfiguring any settings on the mobile phone. For security and privacy, the user will also have to input a password to access the 'SMS divert' service.

The cost of receiving or sending a diverted SMS is the same as that for an ordinary SMS message. As users are using SMS more and more for communication, news updates, and business and financial information, this new technology brings a whole new dimension of convenience in keeping in touch for the already-mobile user who either forgets to carry his mobile phone with him, or when he loses it.

MATRIXVIEW'S DIGITAL CONTENT MANAGEMENT TECHNOLOGY
NETS FROST & SULLIVAN AWARD

CONSULTING COMPANY Frost & Sullivan has awarded the 2005 Technology Innovation Award to MatrixView Limited for its Adaptive Binary Optimisation (ABO) technology. The award was given in recognition of ABO's capabilities in terms of the quality, clarity, speed of transmission, and compression for digital data such as images, sound and text.

Frost & Sullivan analysts conducted extensive research and tracked innovation in key hi-tech markets before giving MatrixView the award for excellence in one or more of the following criteria that were used for selecting the award recipient:

- Significance of the innovation(s) in the industry and across industries (if applicable).
- Potential of the products of innovation(s) to become industry standard(s).
- Competitive advantage of innovation(s) vis-à-vis other related innovations.
- Impact (or potential impact) of innovation(s) on company or industry mindshare and company bottom line.
- Breadth of intellectual property related to the innovation(s) such as patents, scientific publications, and papers in peer-reviewed journals.

MatrixView Limited's Executive Chairman and Managing Director Mr Ravindran Govindan says that ABO achieved this success thanks to a non-traditional approach to digital content management and optimisation.

By using a non-traditional technique that relies on simple arithmetic and logical operations to transform digital data, ABO achieves far superior performance over conventional compression and decompression techniques. Through the use of correlations in digital content signals, as compared to traditional systems which use data elimination, ABO achieves better compression ratios without any loss of data when decompressed.

Mr Govindan feels honoured by the award and added that such recognition coincides with MatrixView's strategic entry into the telemedicine arena with the MATRiXiti suite of solutions. "Having conquered the "tele" word in transmission we're all set to be a world leader in empowering a new Quality of Experience in making the telemedicine experience a patient-centric one," he said. "We are on our way to replicate our successes in healthcare across all other key verticals we've targeted."

According to Mr Govindan, industry verticals that MatrixView feels will benefit from ABO include medical and knowledge management as well as telecommunications, entertainment, electronics, security, defence, life sciences, government, print and media, and oil and gas.

So far, two hospitals have implemented ABO solutions. Sri Sathya Sai Hospital in Bangalore had EchoView successfully implemented, increasing productivity by at least 40 percent, while in Singapore, KK Women's and Children Hospital had a successful trial of EchoView, with 30 times compression ratios achieved for the lossless capture of echocardiogram images, as compared to only eight times for the current standard.

NO MOBILE PHONE CANCER RISK?

ACCORDING TO A study conducted by the U.K. Institute of Cancer Research (ICR), the risk of brain tumour does not increase with mobile phone use, much to the relief of many mobile phone users.

The four year study conducted by ICR and three other U.K. universities interviewed people living across the United Kingdom on their mobile phone usage patterns. The users were asked about their previous usage which included the number and duration of calls.

The study suggests that there is no substantial risk of brain tumour in the first 10 years after starting mobile phone use. However, an increased risk after longer term use could not be ruled out. It concluded that there was no link between regular, long-term use of mobile phones and glioma, the most common type of brain tumour. Neither was there any relation separately for analogue or digital phone use. Early mobile phones were designed to use analogue signals and emitted higher power than current digital phones but there was relatively little information that showed the increased risk of glioma brain tumours with the use of analogue phones.

INFO BYTES

ASIA MOBILITY INITIATIVE (AMI) APPOINTS MR STEVEN SIEW-KEY CHAN AS NEW EXECUTIVE DIRECTOR

The regional alliance of mobile operators, the Asia Mobility Initiative (AMI), has appointed Mr Steven Siew-Key Chan, as its Executive Director. Mr Chan who is on secondment from Singapore mobile operator Mobile One (M1), will develop products and services that will benefit members and their customers. He will also manage AMI's relationships with vendors, suppliers and content providers. His other responsibilities will include working with standard setting bodies, industry groups and vendors to influence standards. Mr Chan is also actively involved in the Wireless Chapter of the Singapore Infocomm Technology Federation in his capacity as a founding member and executive committee member.

MR COLIN PNG APPOINTED AS DIRECTOR OF BUSINESS AND MARKETING ORGANISATION AT MICROSOFT SINGAPORE.

Software giant, Microsoft Singapore has named Mr Colin Png as the new Director of Business and Marketing Organisation. In this new role, Mr Png will lead Microsoft Singapore's business products strategy, marketing communications, events, public relations, branding, corporate and social responsibility initiatives. Prior to this, Mr Png was the General Manager of Microsoft's Consumer division, Asia Pacific.

330,000 SIM CARDS USERS REGISTERED

More than 330,000 SIM card users have registered their particulars with their respective mobile service providers, since 1 Nov 2005. Users who have not registered are encouraged to do so by 1 May 2006 as all unregistered prepaid cards will be deactivated on 2 May 2006. The registration drive is an effort by MHA and IDA to curb illegal activities, including terrorism, which exploit the anonymity of unregistered prepaid SIM cards. Prepaid SIM card users can register or re-register their card when they next top up the value of the card, at any of the 1,400 retail shops selling prepaid SIM cards of their respective service providers, around Singapore.

SINGAPORE NATIONAL EYE CENTRE SETS SIGHTS ON 3D HIGH-DEFINITION TELEMEDICINE

TELEMEDICINE, THE PROCESS by which doctors and specialists consult with patients through teleconferencing technology, has long been a boon to medical science. Through the use of high-speed transmission pipes, specialised equipment and software, a doctor can examine a patient who may be on the other side of the world.

This has helped bring about much-needed medical care and aid to places that are hard to reach due to geographic, economic or political constraints. For example, a cardiologist in the United States can perform a medical examination using an electronic stethoscope on a patient in a developing country and arrange for diagnostics and treatment to be carried out, without even having to leave his workspace.

With the advent of 3D imaging and High Definition (HD) broadcast technology, telemedicine will be further developed to offer even greater depth and detail. The Singapore National Eye Centre (SNEC) recently demonstrated a new telemedicine platform using a unique 3D-HD system to transmit a live ophthalmic surgery procedure from Asahikawa Medical College (AMC) in Hokkaido, Japan. This is the first time such 3D-HD technology will be used on an actual working transmission, which will be sent via Asia Broadband, a new high-speed 155Mbps R&D link between Singapore and Japan.

The video system and software system was developed Panasonic Systems Solutions of Japan and is supported by the Infocomm Development Authority of Singapore (IDA), Ministry of Internal Affairs and Communications of Japan, Singapore Advanced Research and Education Network (SingAREN) and its counterpart, the National Institute of Information and Communication Technology (NICT), Japan.

As part of the transmission experiment project, Professor Akitoshi Yoshida MD, PhD, Chairman of the Department of Ophthalmology, Asahikawa Medical College performed a 'live' vitreo-retinal surgery on a patient, and the procedure was transmitted to SNEC using the 3D-HD format.

The Singapore National Eye Centre viewed the eye surgery images, live, through the special prototype 3D-HD equipment set up in the Centre specifically to evaluate factors such as the quality of images, depth feel, and stability of transmission. A total of 25 eye surgeons in SNEC were present to participate in the evaluation exercise.

The unique feature of the 3D technology was the greatly enhanced images that the audience could see. Through the use of special 3-D viewing glasses, participating doctors could see exactly what the operating surgeon sees through the microscope – in true 3-dimension and enhanced by the high definition (HD) picture quality.

Current telemedicine technology is limited to the standard 2-dimensional transmission, which lacks many details critical to microsurgery, such as depth perception and precise surgical moves. Such improved visualisation will bring about better surgical training and improve results which will ultimately benefit patients.

With the successful completion of the 3D-HD experiment, SNEC is embarking on a new phase to equip itself and its surgeons to transmit live surgery in the 3D-HD format. SNEC plans to organise live surgery demonstrations and teaching courses for eye surgeons in the region using this new groundbreaking audio-visual technology.

Live 3D-HD images

Observing the live surgery through special 3D-HD viewing glasses

WIDENING THE WIRELESS BROADBAND REACH

A CLOSER VIEW OF WIMAX TECHNOLOGY

ALONG WITH WI-FI AND WLAN, WIMAX has been one of the key catchphrases for wireless technology. WiMAX, which stands for Worldwide Interoperability for Microwave Access, is a standards-based wireless broadband access technology. It is a technology that evolved from the Wireless Fidelity (Wi-Fi) standard that has made wireless home networks so popular. As compared to wireless LAN systems (WLAN), WiMAX is designed to work over a metropolitan area network (MAN) for providing broadband wireless access. WiMAX is real wireless fidelity with connectivity up to several miles as opposed to a few hundred feet for 802.11a/b/g.

WiMAX is based on the approved IEEE 802.16 standard, which is promoted by the WiMAX Forum, a non-profit industry-led trade group formed to verify and certify products based on this 802.16 standard.

Currently there are two versions of "WiMAX" standard - IEEE802.16-2004, ratified in July 2004, and IEEE802.16e, ratified in December 2005. These two standards are also commonly known as fixed and mobile WiMAX respectively. "Fixed" and "mobile" refer to the difference in broadband connection experienced at the customer premise equipment (CPE). Users of fixed WiMAX CPE are limited to only a stationary location while mobile WiMAX CPE allows users to be travelling at higher speeds, such as those of moving vehicles.

Like many new technologies, there have been many claims and statements made about WiMAX to boost the adoption and usage of this new standard. One of the most popular claims made by industry players is that WiMAX is capable of delivering Internet access of 75 Mbps over a 70km radius. This can only be true if several conditions are present – that a subscriber station is located within the "line-of-sight" of a base station; the "carrier-to-noise power ratio is sufficient" to support a high rate modulation scheme; if a whole 20 MHz channel is available; and finally only if there is only one subscriber connected to the base station. Thus, it behooves companies and users to carry out their own research first and judge as to its suitability before committing to a WiMAX service provider.

As a basis of comparison, the WiMAX system architecture is similar to that of the cellular system. It uses base stations that provide connection service to a radius of several kilometers. The data rate received by each user will depend on the environment (urban or rural), channel bandwidth, distance between the base station and CPE, base station transmit power and whether the user is stationary or moving at vehicular speed. In fact, because WLAN technology is much less expensive than cellular infrastructure equipment, it is felt that WiMAX could become a threat to the cell phone industry, which is investing in 3G to offer advanced mobile data services.

The WiMAX Forum hosts the certification testing of fixed WiMAX equipments in the appointed certification laboratory. Although there are already many "pre-WiMAX" deployments worldwide, the recently certified equipments will further boost the take-off rate of WiMAX. The certification testing of mobile WiMAX is scheduled before the end of 2006. Even without going through formal certification, Korea looks set to become the first country in the world to commercially launch mobile WiMAX services, also known as Wireless Broadband (WiBro), in the second quarter of 2006.

To further increase the penetration rate and lower the price of broadband internet in Singapore, IDA issued licenses in May 2005 to six local operators to provide wireless broadband services. The operators are allowed to deploy any wireless broadband technology, such as WiMAX or other proprietary solutions. By the end of the year, consumers in Singapore will likely have a greater choice of broadband plans.

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