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The Lua-based Autonomous Robotics Software ("LARS") team with their robot at the trade fair. Pictured (from left) are team leader Isabelle Storey, lead programmer Adrian Taylor, user interaction designer Reece James and Linux expert Jason Lagaac.

Collision-avoiding robot star of show

A robot programmed to avoid objects was the highlight at the annual trade show and research showcase of the University of Wollongong's School of Computer Science and Software Engineering and School of Information Systems and Technology.

The robot navigated around an open space displaying its ability in driving, proximity sensing, video feedback and

servo control.

The robot was programmed using the procedural scripting language Lua which is widely-used in the videogames industry.

Other projects showcased the engineering creativity of the students in the areas of security, content management, decision support and intelligent systems,

eGovernment, signal processing, and supply chains and business services.

The event was opened in the university hall by the deputy vice-chancellor of operations Professor John Patterson.

The event also included a keynote address from Martin Dawson, the chief product architect for Andrew Corporation's Geometrix Mobile Location Centre.

Broadband bidder loses third member

The consortium competing with Telstra in the bid to build the federal national broadband network (NBN), Terria, has been further weakened by the withdrawal of a third member.

TransACT pulled out of the consortium and said it would lodge its own bid to roll out broadband infrastructure in the ACT only. It is the third company to withdraw as the 26 November bidding deadline for the NBN

draws closer.

Soul and AAPT withdrew from Terria last month. Formerly known as G9, Terria now comprises five companies – Optus, Macquarie Telecom, iiNet, Internode, and Primus – which are competing for the contract to build a national fibre to the node network.

In a joint statement, Terria chair Michael Egan and TransACT chair John Mackay said TransACT's departure became necessary

as the federal government's 26 November deadline for bids drew closer.

"This will enable commercial negotiations between TransACT and Terria to be conducted without any conflict of interest, either real or perceived, among our respective directors," they said.

The federal government will contribute \$4.7 billion to the construction of the NBN, which has an estimated cost of \$15 billion.

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Asia-Pacific not immune from crisis

According to technology research firm Gartner, caution created by the global financial crisis is expected to cause Asia-Pacific organisations to delay computer hardware upgrades and large technology projects, focusing on improving client retention and acquisition.

In a worst case scenario, information technology (IT) spending in Asia Pacific is forecast to grow 8.3% in 2009 to reach US\$585.7 billion, compared to Gartner's previous forecast of 11%.

technology vendors will need to be seen to support their customers' cost containment strategies while at the same time focusing on value.

"In Australia, we are still seeing some IT executives with their head in the sand, refusing to believe the grimmer reality of the next six months. This wastes valuable planning time.

IT leaders in this region should take full advantage of the available time to quietly and privately develop plans for a worst case

Under the worst case scenario, the hardware sector will be hardest hit, followed by the IT services sector.

Worldwide, Gartner research indicates that in a worst case scenario, global IT spending will increase 2.3% in 2009, down from a prediction of 5.8% which was made earlier in the year.

Under the worst case scenario, the hardware sector will be hardest hit, followed by the IT services sector. Software spending growth will remain strong at 8.6%.

According to Gartner managing vice-president Matthew Boon, the second half of 2008 will continue to see shifts in confidence and willingness to invest, with chief information officers (CIOs) paying closer attention to investments and requiring higher levels of approval and justification for decisions.

"CIOs in Asia Pacific are being pulled in different directions," said Boon. "On the one hand they are being asked to grow the business to take advantage of market opportunity, and on the other hand to cut costs.

According to Boon, purchasers of IT products will seek lower pricing and tech-

scenario next year," Boon said.

According to data from Global Insights, most Asia-Pacific nations are still expected to show reasonably healthy GDP growth rates in 2009 compared to other parts of the world – 2.3% in Australia, 7.8% in India and 8.9% in China.

While growth in many countries in Asia-Pacific is forecast to be down on 2007 levels, in contrast, GDP is expected to grow just 0.1% in the US and 0.2% in the UK in 2009.

According to Gartner, the IT industry will not see the dramatic reductions seen during the Dot-com bust, because organisations have adopted operating models that are much leaner. IT is embedded in all aspects of the business and is a critical part of multi-year transformation projects that are difficult to cut.

Gartner recommends that Asia-Pacific IT organisations decide what needs to be spent rather than what needs to be cut, question every project as if it was new, prepare a contingency budget approximately 20% down on current year.

Record penalty paid for unsolicited calls

Telecommunications provider Dodo Australia has paid a penalty of \$147,400 after the Australian Communications and Media Authority alleged that an offshore call centre made telemarketing calls on its behalf to numbers on the Do Not Call Register.

This is the largest penalty paid since the Do Not Call Register legislation took effect in May last year.

The company has since taken steps detailed in the Telecommunications Act 1997 to comply with the legislation.

Chris Chapman, ACMA chair, urged

businesses to be careful when hiring offshore call centres to make telemarketing calls.

"You can't hide behind offshore call centres, because ultimately the calls they make are your responsibility."

He said steps a business might take to protect itself from illegal calls by offshore staff might be establishing contractual terms that require compliance with the Do Not Call Register legislation, procedures for checking numbers, staff training and regular audits on the call centre's calling records.

New signal detection system tested in Sydney

The Defence Science and Technology Organisation (DSTO) recently conducted an international experiment in Sydney to develop technology for detecting new generation radar systems.

The trial was carried out in collaboration with scientists from the US, Canada, New Zealand and the UK and aimed to test a technique for collecting data in a realistic setting for the detection and localisation of modern digital radar systems.

During the trial, a boat packed with radar simulation equipment traced a zig-zag path out to sea. It beamed back radar signals which simulated the emissions from a modern radar system. These signals were intercepted by a passive receiver on a balcony overlooking the ocean at Coogee beach.

The boat, which acted as a cooperative target radar during the experiment, moved in rehearsed patterns at ranges of 1km out to 16km from the intercept equipment. High-fidelity data was intercepted and collected by the equipment on the balcony.

The collection times and boat position were logged using GPS equipment.

The aim of the trial was to collect a large amount of realistic intercept data from advanced radar types at various signal to noise ratios.

The data is being used by the research partners for comparing new signal detection and direction finding algorithms.

According to the DSTO, modern radar systems are becoming increasingly difficult to detect against a background of thermal and artificial radio frequency noise.

radio signals.

A radio frequency tuner converts the radio signals from their broadcasted frequency to a lower frequency that can be sampled more readily.

This signal is digitised and signal processing is performed to determine what kind of radar waveform has been detected.

Coogee Beach was chosen due to its proximity to complex and dense radio

The aim of the trial was to collect a large amount of realistic intercept data

The radar intercept systems developed by DSTO are based on commercially-available data acquisition and signal processing elements running locally developed experimental software and firmware. Typical instantaneous bandwidths for the receivers can exceed 500MHz.

The detection system works by using one or more antennas to receive the

frequency "noise".

The beach's closeness to Sydney Harbour's commercial shipping traffic which would be operating several forms of radar, proved ideal.

The height of the balcony above sea level is also roughly the height of the antennas for these types of systems when they are installed on typical naval vessels.

ICT salaries on the rise

The annual survey of Australian Computer Society (ACS) members has revealed a steady rise in the salaries of ICT professionals over the twelve months to May 2008.

The salaries growth is underpinned by an overall solid ICT sector performance across the five year period since 2003.

The survey was conducted for the ACS by the Association of Professional Engineers, Scientists and Managers, Australia.

Remuneration paid to ICT professionals across the 12 month period rose by 4.9%, slightly above the previous year's increase of 4.5%. The 2008 ACS remuneration survey recorded a 5.1% increase for those employed in private companies. This is up half a percentage point from 2007 salary results. The pay of those employed in public organisations increased by 4.1%, people and those in education reported an average pay increase of 3.6%, slightly lower than last year.

The Australian Bureau of Statistics reported an increase in the consumer price index of 4.2% over much the same period, meaning the salaries of the majority of ICT professionals have increased slightly faster than general cost of living increases in Australia.

The most lucrative positions based on total remuneration packages were chief

information officers and general management. For this conclusion, a total package was defined as comprising the value of base salary, bonuses, superannuation and the value of fringe benefits such as motor vehicles.

ACS chair Kumar Parakala said the positive salary results for ICT profession-

als are reflective of the strength of the ICT sector, and the ongoing demand for skilled ICT workers.

"Skills shortages within the ICT sector are expected to grow to 14,000 in 2010 and 25,000 in 2020, with these figures, the demand for qualified professionals shows no signs of slowing down."

Decision of CSIRO patent case upheld

An appeal by Buffalo Technology and Buffalo ("Buffalo") to the US Federal District Court against a previous decision ruled in favour of CSIRO has failed.

Buffalo sought to appeal the result of an action in patent litigation that CSIRO had filed. The action concerned a patent

owned by CSIRO on the wireless local area network (WLAN) technology.

CSIRO had taken legal action against Buffalo, claiming the companies had infringed on the patent which solved the multiple path propagation problem when WLAN signals are sent.

Partnership for supply chain software

Sybase Australia has announced its partnership with IT and business services company Logica, to market Sybase supply chain applications to the Australian logistics and transport industry.

Under the terms of the partnership, Logica will offer Sybase's applications

as part of its sustainable intelligent transport systems and supply chain execution and planning services.

In addition to the logistics and transport industry, the company is aiming its products at utilities and energy companies.

Data centre uses 80% less water

Fujitsu Australia has opened a data centre at Sydney's Homebush Bay after extensive work to improve the facility's energy efficiency and reduce its environmental footprint.

The three-storey building has been upgraded the past eight months to meet Fujitsu's environmental design principles.

The data centre now has high-density, hybrid cooling technology which uses recycled chilled water and spatial layout planning to minimise thermal currents.

The general manager of data centre services Michael Gunton said the closed loop cooling system reduces the amount of water needed to maintain the facility at an industry standard 23°C and 50% humidity.

"The design will use 80% less water than a conventional cooling system and consume up to 32% less energy," he said. "There are auto-sensor lighting systems

that only switch on when needed, reducing usage by up to 60%."

The facility can be run from a central location. "The building control management system allows us to monitor power consumption and adjust settings to improve efficiency," Gunton said.

The centre uses biometric security technology, server virtualisation and meets the Tier III standard of the Telecommunications Infrastructure Association Standard for Data Centres. It will use metering to support

its clients in meeting reporting requirements under the National Greenhouse and Energy Reporting Act 2007.

Gunton said he is confident customers can expect a cost saving of around 20% on their data centre costs.

"We will not only report on each client's individual power and cooling consumption for their data centre operation, but will convert that into greenhouse emissions as part of our environmental accounting service," he said.

Telco position putting jobs at risk

Telstra's refusal to guarantee it will tender to build the federal government's National Broadband Network (NBN) is putting at risk \$11.9 billion of shareholder value and could cost thousands of jobs for Telstra workers, according to the Australian Council of Trade Unions (ACTU).

The ACTU claims Telstra is being aggressive and that this is improving the chances of the main rival bidder, the Terria consortium, in winning the contract to build. In particular, Telstra's refusal to commit to a bid unless they receive an 18% rate of return on the investment, according to the ACTU, could cause the government to award the contract to another bidder,

"The NBN will be a crucial part of Australia's infrastructure".

despite Telstra being the apparent favourite to win the bid as it owns most of Australia's fixed line copper network.

"This aggressive approach puts the longterm interests of Telstra shareholders and the jobs of employees at risk," said ACTU secretary Jeff Lawrence.

In a research report, the ACTU cited research by Merrill Lynch and Citigroup which said Telstra could be placed in financial risk if it did not participate in the building of the network.

The ACTU said Citigroup have estimated a loss of \$11.9 billion in lost broadband customers and network contracts. The ACTU report was prepared in anticipation of Telstra's annual general meeting to be held later this month.

"The NBN will be a crucial part of Australia's infrastructure and it is essential that Australia's biggest telecommunications company is involved in the tender."



The design software won an Engineers Australia Excellence Award.

Electronics design software wins award

Altium has won the inaugural Software and Embedded Systems category in 2008 Engineers Australia Sydney Division's Engineering Excellence Awards

The award recognised engineering vision and rigour in the continued development of the company's Designer software, a unified electronics design tool.

The award also acknowledges the innovations that have been incorporated

into the software over its release history including its single data model, realtime 3D visualisation of printed circuit boards, and realtime 3D clearance checking between printed circuit boards and the cases into which they will be placed as part of the overall design.

The award commended the early business decision to adopt Microsoft Windows as the operating system.

Contract extended

The minister for human services, Senator Joe Ludwig, has announced that Medicare Australia has extended its contract with IBM Australia for the provision of IT infrastructure services.

The extension to 31 March 2010 will cost \$70.3 million.

Parallel computer launched at Canberra university

Sun Microsystems has donated a \$30,000 T2 multicore processor to the Australian National University's College of Engineering and Computer Science.

The computer will support a new post-graduate course on multicore computing, which will be offered to masters students and people from industry for the first time next year. It will also be used by undergraduate students.

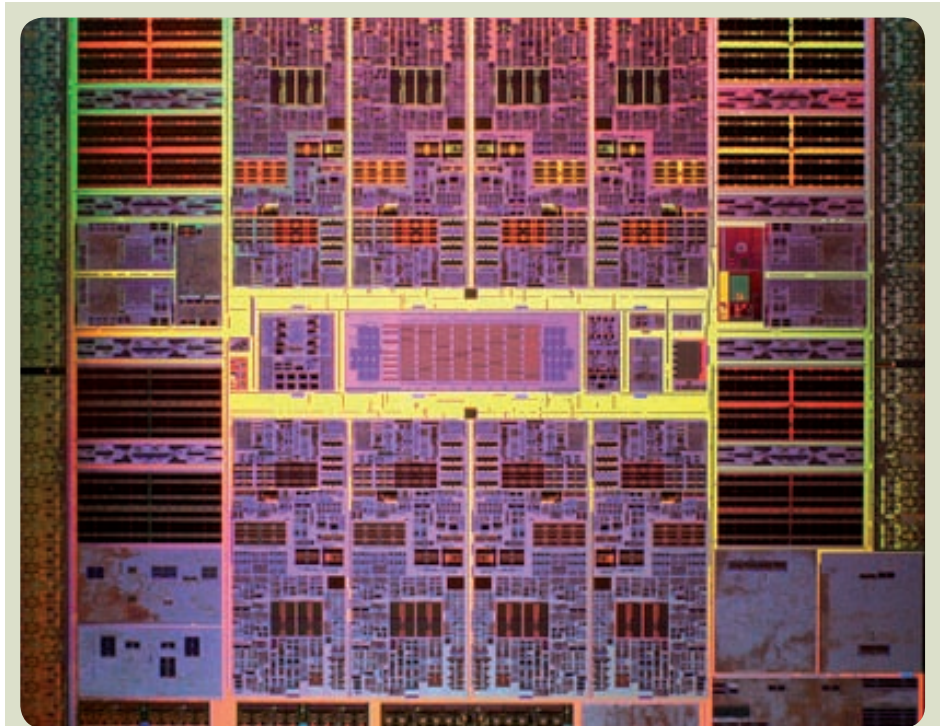
It is hoped the high-powered computer will help counter Australia's lack of technicians skilled in parallel and concurrent processing – the technology that underpins modern websites and databases.

Computer scientist Dr Peter Strazdins said that unlike a conventional server computer which has separate processors manually connected together, the T2 crams 64 processors onto a single chip. He said this means it is able to switch between a large number of tasks very quickly.

"Imagine you have a web server that's receiving 500 requests from different users at the same time. For some of the larger sites that's a very conservative number. More conventional processing technology would be delayed by the time needed to access various discs, whereas a powerful parallel processor like the T2 would be able to mask that lag time."

Strazdins said that while this parallel or concurrent technology is essential for running many online databases and other information sets, there are very few people in Australia with the training to understand how parallel computing works.

"As a nation we're not training enough people to work with this kind of parallel and concurrent processing technology, yet it underpins such a large portion of our



The computer with the advanced T2 chip at the Australian National University will be used to study parallel processing. Shown here is the chip's die, which is the wafer containing the circuits.

information economy," he said. Strazdins, who has been working in the area of parallel processing since the 1990s, says the technology is likely to become more and more important as computational demands outstrip the ability of individual processors to keep up.

Strazdins said another reason multicore processors like the T2 are advantageous is because of their power efficiency, which makes them more cost effective and envi-

ronmentally friendly.

The computer scientist is also part of a team of researchers who've been working with Sun Microsystems on Linkage Grant projects from the Australian Research Council since 2002.

Led by Associate Professor Alistair Rendell, the team have been conducting research into improving the efficiency of high performance computing used in computational science.

Australian research improving image search market

Imprezzo, an image-search software and company established by UniQuest, has launched into the market. The underlying technology was developed by researchers at the University of Queensland (UQ) and the University of Wollongong (UOW). UniQuest is the commercialisation arm of the University of Queensland.

The company is Australian with technical development taking place in Sydney and sales and management functions based in London which are closer to major image libraries and media consumers.

The technology is an improvement on traditional search engines which adds a function allowing users to use images to search for images, rather than using

words. It works by having the user provide an example image, say a photo of a red flower. The engine examines the photo and returns a sample set of possible matches. The user can then select the images which more closely resemble what they are looking for.

The engine analyses the characteristics of the selected sample and then rearranges the results, placing the images that best match the sample selected at the top of the list. So in the above example, all the red flowers in the sample set, as opposed to flowers of other colours, might appear first.

The technology has been designed to complement existing search engines by

acting as a very powerful refinement tool after any initial image results set has been returned.

It is able to accept collection sizes of more than a million images and based on facial recognition technology developed at UQ by computer scientist Dr Kevin Gates and a content-based image retrieval method discovered by UOW researchers Professor Philip Ogunbona and Dr Lei Ye.

Apart from generally improving search accuracy, the technology is aimed at photo agencies.

Imprezzo is the first start-up company to enter the international market arising from the commercialisation collaboration signed between the two universities in 2005.

Better infrastructure health through collaboration

Infrastructure health monitoring is an area which has been developed over the past 30 years through collaboration between electrical/electronic and civil engineers. Such systems can provide information about major structures like bridges and roads and warn engineers well before the wear and tear reaches a dangerous level.

An overview of these systems was given in a presentation "Smart Road Infrastructure" by engineer Phil Mallon organised by the ITEE College in Sydney recently. Mallon also discussed his own experiences with such systems throughout his career.

According to *Health Monitoring of Bridge Structures and Components Using Smart Structure Technology* by Phares et al, health monitoring for infrastructure should have self-diagnostic real-time continuous sensing, advanced remote sensing and decision making and alarm triggering.

In his career, Mallon noticed a shift towards life cycle or asset management and the need for continuing measurement of asset key performance indicators.

While working at the Roads and Traffic Authority (RTA) in NSW, he noticed this meant increasing use of material laboratories in addition to support for the measurement fleet of vehicles.

Among the innovations were the use of fibre optic measurement for stress strain data collection on infrastructure, wireless sensor networks on bridges, and landslide predictions in Wollongong.

For fibre optic sensing, the most widely used technique today is the fibre optical bragg grating process to measure strain, Mallon said. This technology has also been used in the oil and gas industry to monitor structures.

The gratings can be embedded or bonded to structures by casting in concrete or bonded to steel. They are highly sensitive and many sensors can be multiplexed onto a single mode optical fibre. These optical fibres can be as long as 10km or more or can cover all aspects of structures. Strain at the grating is then derived from the narrowband reflected wave back to the optical sensor.

In 2005, the RTA installed sensors and a data acquisition system on the Shepherds Creek Bridge at Belmont near Newcastle to collect supporting information about the new reactive powder concrete material used in the bridge.

During the tests, the overall range of the strain was 130 microstrain and this was well within the range of fibre optical sensing instrumentation.

In addition, the RTA has been working



Fibre optic technology being installed underneath a bridge by the University of NSW's electrical engineering department for the Roads and Traffic Authority, NSW.

with Monitor Optics Systems to supply and install commercial sensors and provide monitoring for Hampden Bridge in the Kangaroo Valley and the impact of land subsidence from long wall mining on the Hume Highway.

According to Mallon, the most interesting research work underway in wireless sensor networks is being done at the University of California Berkeley (UCB). With the financial backing of Intel, UCB are exploring the use of smart dust or MOTES to provide a smart network of sensors on the Golden Gate Bridge in California.

Each of the 200 MOTES used runs a tiny 8MHz processor with four accelerometers for sensing and a wireless transceiver to communicate with the network. The project's objective was to determine how much the bridge sways in a gust and to evaluate how effective the sensors were for early warnings of earthquakes.

While the current size of each MOTE is about the size of tennis ball, the ultimate aim is to reduce the size to 1 cubic mm – the size of a speck of dust. Each MOTE will be solar powered and contain sensors to suit the measurement application.

Mallon then discussed RTA's monitoring of ground movements and potential landslides at Mount Ousley Road near Wollongong.

The first remedial measures by the RTA were to monitor the site using piezometers

and inclinometers. Now, there is a network of continuous real time monitoring stations managed by the landslide research team at the University of Wollongong (UOW). The data acquisition system is a CR10X system from the US firm Durham Geo Slope Indicator.

"Where this project is different from the others is that it has added additional software processing based on data mining and machine learning to predict landslides and make the information readily available on the internet," Mallon said.

According to Mallon, the system developed by the UOW is a health monitoring system that satisfies the Phares criteria. In this system, on-site monitoring using in-place inclinometers, vibrating wire piezometers and rain gauges are connected to a data logger.

In turn, data collected is made available in real time remotely via mobile phone data links and the software at the UOW is able to identify sites. This could provide alarm triggers.

According to Mallon, the partnership between the UOW and the RTA has resulted in a much better understanding of how landslides develop in the Illawarra area and how they can be controlled.

Phil Mallon is a manager for intelligent transport systems projects at the Roads and Traffic Authority, NSW.

For a more comprehensive list of engineering events, visit Engineers Australia's online events calendar at www.engineersaustralia.org.au/events

Conference: Medical bionics conference 2008 (4 days) Lorne, Victoria 16 Nov. *Inquiries:* 02 6251 0675, fax 02 6251 0672, email medicalbionics@consec.com.au, web www.medicalbionics.consec.com.au

Seminar: Can you afford not to look at open source? (1 day) Melbourne 18 Nov, Canberra 19 Nov, Sydney 20 Nov, Auckland 2 Dec, Wellington 4 Dec, Adelaide 9 Dec. *Inquiries:* web www.apac.redhat.com/promo/look

Conference: ITSMF Australia 3rd annual 2008 IT service management industry awards (1 day) Flemington, Victoria 28 Nov. *Inquiries:* web www.itsmf.org.au

Conference: Ruxcon 2008 (2 days) Sydney 29 Nov. *Inquiries:* email ruxcon@ruxcon.org.au, web www.ruxcon.org.au

Conference: PDCAT08: 9th international conference on parallel and distributed computing, applications and technologies (4 days) Dunedin 1 Dec. *Inquiries:* email pdcat08@cs.otago.ac.nz, web www.cs.otago.ac.nz/pdcat08

Conference: ATNAC 2008: Australasian telecommunication networks conference (4 days) Adelaide 7 Dec. *Inquiries:* Michael Rumsewicz email michael.rumsewicz@adelaide.edu

au, web www.plevin.com.au/atnac2008

Conference: Australasian computer-human interaction conference (5 days) Cairns 8 Dec. *Inquiries:* web www.ozchi.org/mediawiki/index.php/OZCHI_2008

Conference: Australasian universities power engineering conference (4 days) Sydney 14 Dec. *Inquiries:* web www.ee.unsw.edu.au/aupec2008

Conference: Mid north coast amateur radio group (1 day) Coffs Harbour 18 Jan, 2009. *Inquiries:* 02 6655 2990, mob 0422 216 773, email radiusupply@hotmail.net.au, web www.mncarg.org

Conference: Information online 2009 (3 days) Sydney 20 Jan, 2009. *Inquiries:* Emma Waygood 02 9437 9333, fax 02 9901 4586, email infoonline2009@conferenceaction.com.au, web www.information-online.com.au

Conference: Linux.conf 2009 (3 days) Hobart 21 Jan 2009. *Inquiries:* email contact@marchsouth.org, web linux.conf.au

Exhibition: Central Coast Amateur Radio Club field day (1 day) Wyong 8 February 2009. *Inquiries:* 02 43402500, email ccarc@ccarc.org.au, web www.ccarc.org.au/fieldday/index.htm

Conference: Software

development conference 2009 (2 days) Wellington 26 Mar 2009, Melbourne 23 Mar. *Inquiries:* email info@softed.com, web www.softed.com/sdc

Conference: 20th Australian software engineering conference (4 days) Gold Coast 14 Apr 2009. *Inquiries:* email aswec2009@itee.uq.edu.au, web aswec2009.itee.uq.edu.au

Conference: Cebit 2008 (3 days) Sydney 12 May 2009. *Inquiries:* web www.cebit.com.au

Conference: Sigmod international conference on management of data 2009 (4 days) Providence, US 29 Jun 2009. *Inquiries:* web www.sigmod09.org

Conference: Emergency power supplies (3 days) Brisbane 22 Jul 2009. *Inquiries:* email sarah.montgomery@idc-online.com, web www.idc-online.com/cons/?country=Australia

OVERSEAS

Conference: International RF and microwave conference 2008 (3 days) Kuala Lumpur 2 Dec. *Inquiries:* email mazlinae@gmail.com, web www.uthm.edu.my/apmttemc

Conference: Australasian computer-human interaction conference (5 days) Cairns 8 Dec. *Inquiries:* web www.ozchi.org/mediawiki/index.php/OZCHI_2008

Conference: 2008 international conference on computer

science and software engineering (3 days) Wuhan, China 12 Dec. *Inquiries:* email csse@highsci.org, web www.highsci.org/csse2008submission/website/csse/index.aspx

Conference: 5th international conference on electrical and computer engineering (3 days) Dhaka, Bangladesh 20 Dec. *Inquiries:* email icecetech@eee.buet.ac.bd, web www.buet.ac.bd/eee/icece

Conference: Location-based services forum 2009 (2 days) Prague 15 Jan 2009. *Inquiries:* www.jacobfleming.com/conferences/telecom/location-based-services-forum-2009?partner=freelisting

Conference: IS&T / SPIE electronic imaging 2009 (5 days) San Jose, US 18 Jan 2009. *Inquiries:* email customerservice@spie.org, web electronicimaging.org/?WT.mc_id=RCALENDARW

Conference: International conference on knowledge networking in ICT era (3 days) Chennai, India 22 January 2009. *Inquiries:* email p_panneer@yahoo.com, web www.crescentcollege.org/pdf/international-conference.pdf

Conference: International conference on computing, communication and control (2 days) Maharashtra, India 23 Jan 2009. *Inquiries:* email surve@frcrce.ac.in, web frcrce.ac.in/icac

Conference: 2nd IEEE international conference on computer, control and communication (2 days) Karachi, Pakistan 17 Feb 2009. *Inquiries:* email nusrat@pniec.edu.pk, web www.ic-4.org

Call for papers

Conference: 20th Australian software engineering conference (4 days) Gold Coast 14 Apr 2009. *Inquiries:* email aswec2009@itee.uq.edu.au, web aswec2009.itee.uq.edu.au

Abstracts due: 18 Dec (industry paper). ■

Technology and Communications

J Armstrong, M Rhys-Jones, D Dresner \$45 + GST = **\$49.50**

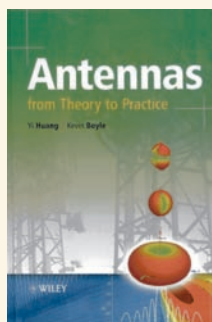


This is a practical guide to the effective management of technology and communication risks. It covers accessibility of information, acceptable use of information, directors' legal duties, general legal compliance, protecting networks from external and internal threats, encouragement security awareness at management and employee level, reputational risk management, and national and international risk and security standards.

2004 075452468X 209pp

Antennas: From Theory to Practice

Yi Huang, Kevin Boyle \$150 + GST = **\$165**



The basics of modern antenna design and theory is covered in this book. Features include # Thorough coverage of the basics of transmission lines, radio waves and propagation, as well as antenna analysis and design # Industrial standard design software tools antenna measurement equipment, facilities and techniques # Electrically small antennas, mobile antennas, UWB antennas and new materials for antennas.

2008 9780470510285 363pp

New modular safety system

Siemens has released its new modular safety system – the Sirius 3RK3 series. It is designed to combine the functionality of a simple safety relay and a fail-safe programmable logic controller.

The core of the system is the central unit with eight safety-related inputs, one safety-related relay output and one safety-related solid-state output.

Up to seven safety or standard expansion modules can be connected to the central unit.

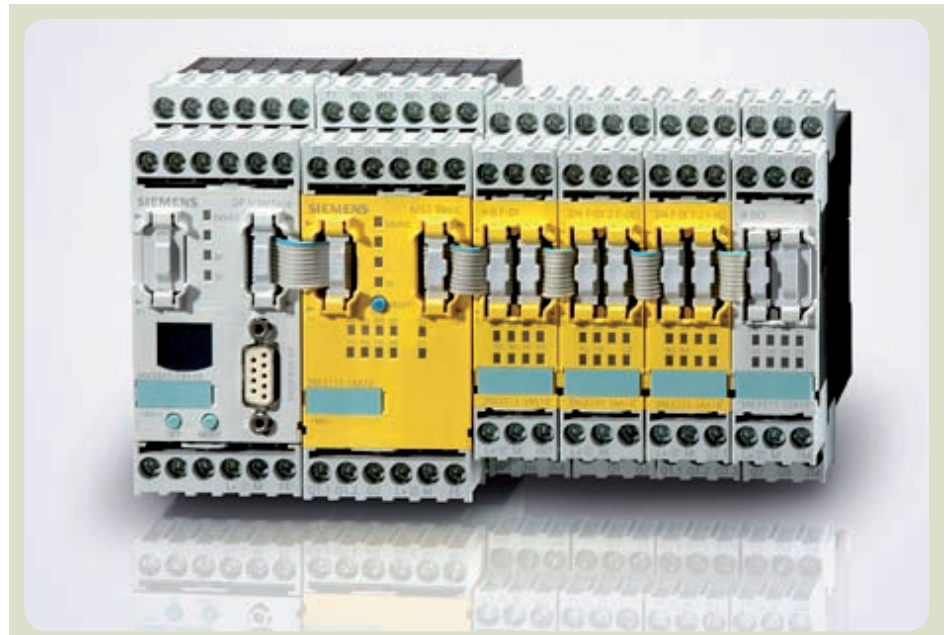
The expandability makes the one system scalable for applications with as little as three safety functions to as many as 40.

The safety system can provide savings where several safety relays are required to combine various safety functions as no wiring is required due to its modular design.

Extra functions can be added by installing additional expansion modules.

The online parameterisation software replaces the manual wiring of functions.

[More information – Qikreply 22](#)



Up to seven safety or standard expansion modules can be connected to the central unit.

Antenna with horizon suppression

The antenna has an annular patch design. Its radiation pattern has a deep null at the horizon. This greatly reduces the susceptibility of the GPS system to interfering terrestrial signals, a feature which has been successfully demonstrated in field trials.

The antenna consists of an aluminum disk and a lexan polycarbonate radome which houses the patch element. The

antenna is fully sealed and has been immersion tested, has successfully passed drop-tests onto concrete and has an exterior finish in a matte sandstone paint.

It has a frequency range of 1575MHz to 10MHz. There is a SMA jack located under the center of the antenna with a provision for an RF cable stress-relief clamp.

[More information – Qikreply 24](#)

Software development kit

Fluffy Spider Technologies, a provider of embedded GUI platform technology has announced its FancyPants software development kit (SDK) now supports Freescale's MPC5121e processor.

The FancyPants SDK provides an applications programming interface with an embedded runtime for the hardware ac-

celeration and codecs found in portable media players, smart phones and television set top boxes.

The MPC5121e is a multicore system-on-chip device designed for applications requiring complex graphics, multimedia and audio processing.

[More information – Qikreply 16](#)

Compact computer released

Pioneer Computers Australia has released a compact computer, the DreamVision NetTop PC MD 1. It is powered by the Intel Atom 1.6G processor N270. It measures 270mm x 200mm x 60mm.

In the front, it has two USB 2.0 ports, a mic and headphone jack and a card reader which can take SD, MMC, MS cards with an option for MS PRO cards.

At the back, there are ports for D-Sub VGA, RJ45, COM, six channels of high definition audio, four USB 2.0 ports and two PS/2 ports to a support keyboard and mouse.

It supports WLAN's 802.11a/b/g frequency, Windows 2000, Windows XP and Windows Vista Basic.

[More information – Qikreply 21](#)



The unit is powered by the Intel Atom 1.6G processor N270.

New notebooks in aluminium

Apple has released the new MacBook and 15-inch MacBook Pro which have aluminium cases made from a single block of aluminium, rather than previous designs which were made from multiple parts. This leads to improved durability.

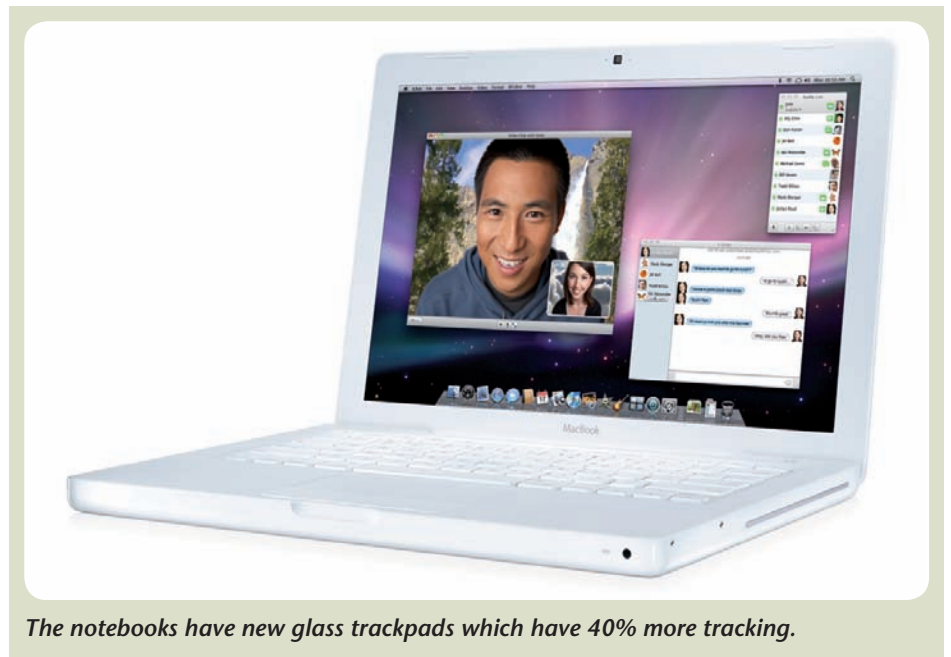
The notebooks have new glass trackpads which have 40% more tracking area. New gestures allow users to activate Exposé or switch between applications at the touch of a fingertip. The trackpad surface is also a button.

The notebook meets the requirements of the Energy Star 4.0, EPEAT Gold and RoHS environmental standards by eliminating the use of brominated flame retardants, using only PVC-free internal cables and components, and using energy efficient LED-backlit displays that are mercury-free and made with arsenic-free glass.

Other features LED-backlit screens and nVidia GeForce 9400M graphics processors that features 16 parallel processing cores and delivers up to five times the 3D graphics performance as previous MacBook and MacBook Air designs.

The 13-inch Macbooks are available in two models – the 2.0GHz MacBook with a 160GB 5400rpm hard drive, and the 2.4GHz MacBook with a 250GB 5400rpm hard drive and a backlit keyboard.

The 15-inch MacBook Pro is 24mm thick and weighs 2.49kg. It Intel Core 2



The notebooks have new glass trackpads which have 40% more tracking.

Duo processors running up to 2.8GHz, and a graphics architecture that allows users to switch between the NVIDIA GeForce 9400M integrated graphics processor for better battery life and the NVIDIA GeForce 9600M GT discrete graphics processor for higher performance.

It is available in two models – a 2.4GHz model with a 250GB 5400rpm hard drive

and a 2.53GHz model with a 320GB 5400rpm hard drive.

The updated 17-inch MacBook Pro keeps its original aluminium design, and now comes standard with a high resolution 1920 x 1200 LED-backlit display and a larger 320GB hard drive or an optional 128GB solid state drive.

[More information – Qikreply 20](#)

A PC built into your car

Westwell is distributing one of the first fully integrated in-car PCs to the Australian market.

The Azentek CPC-1200 and CPC-1100 in-dash car computer systems provide users with all the features of a car stereo, with GPS navigation, mobile phone integration through Bluetooth, multimedia playback and automobile diagnostics capabilities.

The in-car PC systems recently won an award at the 2008 Consumer Electronics Show in Las Vegas.

Westwell is also launching the Azentek SmartMirror GPS navigation rear view mirror, which has a reversing camera. It is designed to replace a car's standard rear-view mirror and provide drivers with a highly functional, intuitive GPS system that is easy to see and simple to use.

The CPC-1200 is a PC using an Intel Core Duo 1.66GHz processor, 160GB hard drive, 1GB DIMM memory and running Windows Vista. It has a DVD-ROM and CD-RW drive, 6.5-inch LCD-TFT digital touch screen



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monitor and WiFi 802.11b/g wireless connectivity. It allows users to play the radio, music files and DVDs, access the GPS, make and receive mobile phone calls, send and receive emails via voice recognition and touch screen.

The PC is integrated to the car's engine computer and can receive data from the car,

such as trip information.

The CPC-1100 has similar features but has an Intel Graphics media accelerator 950, 7-inch motorised touch screen monitor and an optional vehicle diagnostics package. They will be available in December from motor vehicle manufacturers and auto fitters.

[More information – Qikreply 17](#)

Notebook for gaming

Asus has launched the G71 series of notebooks that use Intel's Core 2 Extreme processor QX9300. It is designed for those who want mobile computer gaming.

The removal of the overspeed protection means that the computer is able to be overclocked, which is the practice of increasing the CPU clock speed beyond its regular speed.

It has a 17" display with a response time of 8ms, an nVidia GeForce 9700M GT GDDR3 graphics card with 512MB of RAM.

The notebook comes with Direct Console 2.0 which is a gaming control interface that allows users to select from three processor speed settings depending on their mode of usage.

The same interface also includes controls for Direct Messenger which works with communication programs like instant messaging and email notification. It acts as a secondary display and shows battery reserves and system loading.

The gaming hotkeys allow users to launch games with a single touch. The case has a programmable lighting system, which



The gaming hotkeys allow users to launch games with a single touch.

lights up and blinks during in-game events. These lights can be configured through the Direct Console 2.0.

Other features include Altec Lansing

speakers with a subwoofer, WiMAX/ WiFi Link 5100, and a DVD combo drive and Blu-ray DVD writer.

More information – Qikreply 26

Live streaming video

Digital Rapids has released TouchStream, an appliance for streaming live video and audio.

The unit has a touchscreen interface with integrated live video monitoring and VU meters for audio validation, eliminating the need for laptops, keyboards, mice and separate monitors. It can be used for on-location live streaming of events such as concerts and sporting matches.

A choice of formats are available including AVC/H.264 including Flash Player 9, VC-1 for Windows Media, On2 VP6, 3GPP and MPEG-2.

More information – Qikreply 18



The unit has a touchscreen interface with integrated live video monitoring.

Wireless router

D-Link has released the DIR-320 Wireless G Router with USB Print Server. It is designed as an entry-level wireless G router for home or small office users who want to share an existing internet connection and USB printer rather than purchasing two separate devices.

The router connects to a broadband modem to wirelessly share a high-speed internet connection. The guest zone function provides a secondary wireless service set identifier. This means users can set up a second public name for their wireless network

which is separate from the main network domain for better security and management. It also includes a built-in firewall and media access control filtering to prevent unauthorised network access and parental control features. It supports encryption for Wi-Fi protected access and wireless provisioning services for wireless security. In addition to a USB port supporting connection to a USB printer for sharing on the network, the router also provides four Ethernet ports.

The setup wizard and Wi-Fi protected setup configures internet service provider

settings to connect to the internet and add new wireless devices.

More information – Qikreply 19

For more information on any of these products, send an email to pennyhg@engineersmedia.com.au with the subject headline "Monitor Qikreply". Your contact details and the Qikreply number of the product should be included in the body of the email.