



State of the Future



Photograph courtesy of the Department of Environment and Conservation.

WAMSI advancing marine science research in the 'Marine State'

The Western Australian Marine Science Institution (WAMSI) is leading the way in scientific research relating to Western Australia's precious marine and coastal environment.

With 85 research projects well underway, WAMSI has built strong capabilities in fisheries management, the impacts of climate change, conservation, tourism, the oil and gas sector, coastal planning and developments, aquaculture and pharmaceutical developments.

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Better broadband for WA



Minister Bill Marmion with CEO of Nextgen Networks Phil Sykes at the launch of the NBN Perth to Geraldton fibre optic link.

The State Government is establishing a new working group to coordinate Western Australia's participation in the National Broadband Network (NBN).

Minister for Commerce; Science and Innovation, Bill Marmion said the group would be established to recognise the positive impact high speed broadband delivers and to bring the needs and interests of West Australians to the fore.

"The National Broadband Network is an opportunity to improve the telecommunications infrastructure in the State," Mr Marmion said.

"The broadband working group will serve as a single point of contact in our negotiations with the Commonwealth Government's NBN Co Limited and other stakeholders.

"A broad cross section of relevant stakeholders from around the State as well

as Government departments will be asked to participate to ensure as many communities as possible benefit from the NBN."

The Commonwealth Government established the NBN to build and operate the proposed National Broadband Network. Minister Marmion said establishing the group was one of the steps the State Government was taking to ensure there was full consideration of the State's telecommunication needs.

"The State Government is also undertaking a State Telecommunications Needs Assessment to identify the deficiencies and gaps in WA," he said.

"The assessment will provide recommendations to facilitate the development of infrastructure and solutions to improve services. It will also serve as a useful tool to guide and maximise opportunities arising from the NBN."

Mr Marmion recently attended an event at

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Minister's foreword

As Western Australia's new Minister for Commerce, Science and Innovation, I am committed to supporting the role of science, innovation and technology in the State.

Science and innovation underpins the sustainable economic development of Western Australia. It is through technology development and its adoption that our State has developed strengths in the areas of mining and mining services, medical research, subsea oil and gas technologies, supercomputing, geothermal energy, e-medicine, radio astronomy, data linkage, shipbuilding and defence.

Coming from an engineering background, I am passionate about the important role these sectors play within our society.

Western Australia is home to many people with outstanding innovative minds making significant contributions to the success of our State. I encourage all

scientists, science teachers and facilitators of science outreach initiatives to enter the prestigious Western Australian Science Awards, which recognise the groundbreaking achievements of our science community.

I recently approved funding of more than \$3.6 million for the operation of IVEC's Pawsey High Performance Computing Centre for Square Kilometre Array (SKA) Science.

This funding will complement the Commonwealth Government's commitment of \$80 million over four years to establish the Pawsey Centre. The centre will house a supercomputer capable of performing computational science almost 55,000 times faster than a typical PC.

The centre will significantly boost Australia and New Zealand's chances of securing the \$2.5 billion SKA project, a revolutionary radio telescope for the 21st Century.

The State Government is working to ensure that Western Australia is placed in a strong position to win the bid to host the SKA in the Mid West. In June, Parliamentary Secretary Helen Morton led an international mission to the International SKA Forum in The Netherlands. The forum brought together interested scientists, engineers, politicians and industrial partners to discuss the real benefits and opportunities this impressive project will deliver.

The mission saw CSIRO sign a Statement of Intent with ASTRON, the Netherlands Institute for Radio Astronomy, to cooperate on developing and testing technology that will ultimately make the SKA possible.

This is just one example of the cooperation that is needed to bring such an ambitious science project to fruition.

The Western Australian Government continues its

commitment to developing a strategic focus in science, innovation and technology through the establishment of a science and innovation advisory council. Many of the strategic recommendations are being acted upon and work is currently being undertaken to appoint permanent council members.

I look forward to working in collaboration with government, industry and academia to create an environment in Western Australia that supports the competitiveness and productivity of strategic sectors, plus development of innovative growth industries. This direction will ensure Western Australia can further its reputation as an international leader in fields of strategic importance to the State.

**The Hon Bill Marmion MLA
Minister for Commerce;
Science and Innovation**

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Gingin with Senator Stephen Conroy, Federal Minister for Broadband, Communications and the Digital Economy, to mark the commencement of construction of the NBN Perth

to Geraldton fibre optic link. The new 426 kilometre backbone link will connect Perth and Geraldton to directly benefit around 35,000 people in the region. The fibre will

increase carrier competition, offer faster broadband speeds and more choice for people and businesses across the region. The work forms part of the

Minister Bill Marmion with CEO of Nextgen Networks Phil Sykes.

Commonwealth's \$250 million National Broadband Network (NBN) Regional Backbone Blackspots Program.

Data safe at the AMC

What would happen to your business' valuable data if your servers crashed or there was a fire?

HPC Data Centre's first data centre located at the Australian Marine Complex (AMC) Jakovich Centre offers a solution to this problem.

The AMC Data Centre provides a convenient, secure and controlled environment to house IT infrastructure for storage and disaster recovery.



HPC Data Centre's Managing Director, Justin Thomas said it was often not financially viable to develop the necessary infrastructure in-house to provide an appropriate environment to house mission critical IT systems and data.

"Companies collect meaningful data that is very important to their business but this data is not always needed day-to-day," Mr Thomas said.

"Dedicated data centers offer a cost effective solution to store and backup this data and their associated systems.

"Storing your servers off-site ensures your business information is safe from any event which puts your business continuity at risk."

Current state-of-the-art IT infrastructure demands significant amounts of energy

to operate and keep cool. The HPC data centers have been designed to deliver the kind of power and cooling required in the most secure, cost effective, reliable and scalable manner.

Mr Thomas said keeping computer systems cool was imperative to the protection of the data they store.

"Using innovative equipment and technology has been a major driver in the development of this data centre," Mr Thomas said.

"In a Western Australian first, we are using the Chatsworth Vertical Exhaust Duct Server Cabinets, combined with computer room air conditioners, to regulate the temperature of the centre.

"This system allows more of the rack to be used to house

equipment and therefore our customers use less rack space and save money."

The centre houses more than 100 racks with mechanical and electrical services capable of providing more than six kilowatts of average power and cooling to each server rack cabinet.

The AMC Data Centre is monitored round the clock and a dedicated on site services team is available to help clients deploy and manage their equipment.

For more information about the AMC Data Centre contact Justin Thomas on 0412 995 878, justin.thomas@hpcdc.com.au or visit www.hpcdc.com.au

Nominations open for prestigious science awards

Nominations are now open for the 2010 Western Australian Science Awards.



Winner of the 2009 Scientist of the Year Professor Cheryl Praeger.

The awards honour the outstanding achievements of Western Australia's science and innovation community and recognise the important role of science in WA.

The State Government is encouraging nominations from leading and emerging scientists, science teachers and facilitators of science outreach initiatives.

The 2010 Western Australian Science Awards categories are:

- Scientist of the Year \$50,000

- Early Career Scientist of the Year \$10,000
- Science Educator of the Year: Primary \$10,000
- Science Educator of the Year: Secondary \$10,000
- Science Outreach Initiative of the Year \$10,000

Nominations close Friday 30 July 2010 at 5.00 pm.

For more information or to download nomination forms and award guidelines visit www.commerce.wa.gov.au/scienceawards

National Science Week

Join in the fun and celebrate the 2010 National Science Week, held during 14-22 August.

National Science Week is Australia's annual celebration of science and technology and features around 1,000 events nation-wide.

The Federal Government initiative aims to promote

science and highlight the importance of science in our everyday lives.

WA's Coordinator of National Science Week, Vanessa Baker said the week involved more than one million participants across the nation, with another 160,000 taking part in school activities.

"Last year, WA held 303 events on various topics such as radio astronomy, forensic science, biodiversity, engineering and

physics," Ms Baker said.

"These events attracted a wide audience ranging from children to adults and science amateurs to professionals.

"I encourage all individuals, groups and communities to participate in National Science Week events in August."

For more than 10 years, National Science Week has been providing an opportunity to acknowledge Australian scientists' contributions to

the world of knowledge, encouraging interest in science pursuits and getting younger people fascinated by the world in which we live.

The Department of Commerce is one of the key sponsors of National Science Week.

For more information on National Science Week events in Western Australia visit www.scienceweek.gov.au or view the enclosed brochure.

WA oil and gas mission bound for Norway

The Western Australian Government will lead a mission to Norway to attend the Offshore Northern Seas (ONS) Conference and Exhibition in August.

Department of Commerce's TradeStart Export Advisor Christine Schulz said the announcement had been made on the back of the most successful Australasian Oil and Gas (AOG) Exhibition and Conferences held to date.

"Western Australia is one of the world's major oil and gas regions, in both access to reserves and our services industry," Ms Schulz said.

"This mission will build new and future relationships while promoting the State's capabilities to more than 40,000 key decision makers in the international petroleum sector.

"Companies attending the mission will have access to the Western Australian stand as

Promoting WA's oil and gas industry at the AOG conference.



well as customised business itineraries and organised industry briefings."

ONS 2010 will be held in Stavanger, Norway, from 24 - 27 August 2010. The conference brings together technical specialists, analysts and senior government and industry representatives from all over the world to view new products and services and discuss issues surrounding the international oil and gas industry.

Companies will also be given the opportunity to visit Aberdeen, another critical oil and gas hub, straight after

Norway to further expand their international links.

Lord Mayor and World Energy Cities Partnership President Lisa Scaffidi said the City of Perth supported the mission to Stavanger.

"Stavanger and Perth are both members of the World Energy Cities Partnership (WECP) and have a strong relationship that has been built over many years," Ms Scaffidi said.

"WECP encourages the exchange of energy industry knowledge and economic and infrastructure development strategies between the 16 energy city partners.

"The mission will further expand this relationship and provide endless opportunities for the State's oil and gas services industry."

The mission will be supported by the City of Perth, the WA European Office in London, the Skilled Migration WA Unit, AMC Management (WA) Pty Ltd and the State Government Departments of Commerce and State Development.

To see how your company can be involved in the mission contact Christine Schulz on **+61 8 9263 8019**.

WAMSI advancing marine science research in the 'Marine State'

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UWA researchers launch an ocean glider in the Kimberley.

Photograph courtesy of the University of Western Australia

The institution consists of 15 organisations and began in 2006 after receiving \$21 million from the Western Australian Government. With in-kind support from its partners and a range of new supporters including oil and gas companies, marine service organisations, government agencies, scientific organisations and universities, WAMSI has become a \$93 million portfolio in just five years. WAMSI Board Chairman Dr Peter Rogers said the range of expertise available through the partner agencies was the key to WAMSI's success to date.

"As our population continues to grow and new demands are placed on our marine and coastal ecosystems there is a need for more science-based knowledge of WA's ocean environment," Dr Rogers said.

"With the scale of human use of the marine environment coupled with predicted climate change the impacts on our marine and coastal environments need to be understood."

Dr Rogers said more than 30 WAMSI research projects at Ningaloo Marine Park, along with CSIRO's Wealth from Oceans Flagship program, had completely mapped the inshore waters of the park

and included new discoveries in the deeper water.

"The process of bringing marine research provider organisations together to conduct collaborative research programs in Western Australia, the 'Marine State,' has provided enormous benefits for WA and Australia," he said. "WAMSI is now looking at future opportunities for research in the Kimberley and offshore regions of the North West."

For more information on the Western Australian Marine Science Institution visit www.wamsi.org.au



Photograph courtesy of the University of Western Australia

WA venture capital company invests in crime fighting software

A \$40 million Western Australian venture capital company, Yuuwa Capital, has made its first investment in computer software that can help in the fight against crime and terrorism.

Developed by Curtin University of Technology and commercialised by iCetana Pty Ltd, the video analytical software can identify and report

unusual behaviour in busy environments such as crowds. Yuuwa Capital, established in 2008 by Liddy McCall, James Williams and Matthew Macfarlane, is focused on investments in the software/internet, life sciences, communications technology and clean technology sectors.

Located at the Innovation Centre WA in Technology Park Bentley, the company operates with committed capital from clients of Candor Financial Management and the Australian Government's Innovation Investment Fund program.

Yuuwa Capital and Curtin will invest up to \$1.5 million in the novel technology, which

automatically learns 'normal' movement behaviour and has the ability to detect unforeseen incidents, alerting security to their occurrence in real-time. Investment Director for Yuuwa Capital and interim CEO of iCetana Matthew Macfarlane said the software would be available soon for use in video surveillance systems around the world.

"iCetana is a revolutionary technology that will change the way high motion environments are monitored by video surveillance," he said.

"Using this software, overstretched and understaffed security staff will be able to better focus their real-time

surveillance of locations of interest.

"iCetana will also seek partnering opportunities for non-security applications such as manufacturing process control systems."

The technology is currently being trialled with the City of Belmont for public space security surveillance and also at the Public Transport Authority of Western Australia targeted at 'trip/fall' detection on train platforms, stairs and escalators.

For more information on Yuuwa Capital visit www.yuuwa.com.au

State Government's funding boost for supercomputing facility

by Laura Glitsos

Western Australian supercomputing hub iVEC (Interactive Virtual Environments Centre) is now primed to become one of the most advanced in the world, after the State Government announced additional funding of more than \$3.6 million.

The State funding is on top of the previous \$80

million injection from the Federal Government's Super Science scheme for the establishment of the Pawsey High Performance Computing Centre for SKA Science.

iVEC's Chief Executive Officer Andrew Rohl said the centre was 'over the moon' about the State Government's level of support.

"The \$80 million from the Federal Government was provided for the infrastructure establishment of the Pawsey Centre only," Professor Rohl said.

"Not one dollar can be spent on actually operating it. This means things like electricity bills, which are pretty big expenses in this kind of project.

"The extra funding will allow us

to harness the opportunity of establishing this very significant facility in Western Australia."

Professor Rohl said the funding for the Pawsey Centre will increase the level of iVEC's

coup for Australia's bid to host the project.

Professor Rohl said iVEC's aim was to acquire and house one of the top 20 super computers in the world.

"The extra funding will allow us to harness the opportunity of establishing this very significant facility in Western Australia."

high performance computing by 250 times and will facilitate areas such as geosciences, atomic physics, nanosciences, bioinformatics and engineering.

One quarter of the centre's resources has already been dedicated to the Square Kilometre Array, a massive

"Australia will have three world-class computing centres (including Victoria and Canberra) in the next two years," he said.

"A lot is happening around this very large investment and it allows us to transition from where we are today into petascale computing."

WA to host international science parks conference

Western Australia has been selected to host the 14th annual International Association of Science Parks (IASP) – Asian Science Park Association (ASPA) joint conference.

The conference, coordinated by the Department of Commerce, will be held at the Burswood Convention Centre from 24 – 26 November 2010.

Nobel Laureate, Professor Barry Marshall and NSW-based science and technology policy specialist Professor Tim Turpin will be the keynote speakers among a line-up of internationally renowned presenters.

Speakers and delegates will consider the theme *The Asia-Pacific's Innovation Hot Spots – Opportunities for Sustainable Collaboration* and related sub-themes, as part of a challenging and informative program.

The event provides the ideal opportunity for vigorous debate, forging new global connections, meeting peers,

catching up with existing associates, as well as enjoying the unique features WA has to offer.

Limited sponsorship opportunities are still available for promotion to a local, national and global audience of representatives from the science and technology parks community.

The IASP, a non-government organisation with Special Consultative Status with the Economic and Social Council of the United Nations, is a worldwide network of science and technology parks that provide services and promote innovation, entrepreneurship,

knowledge and technology transfer. The ASPA, also an international non-government organisation, promotes global collaboration in the development of innovation, science, technology and industry in the Asian region.

For more information on the conference, registrations or sponsorship options, visit www.iceaustralia.com/2010iasp-aspa/index.html or email the Conference Secretariat at 2010iasp-aspa@iceaustralia.com



Improved telecommunications to save lives

Residents in the high risk bushfire areas of Balingup and Quongup in Western Australia will benefit significantly from improved mobile telecommunications infrastructure.

Under the \$1.2 million Community Emergency Mobile Communications Project, the two areas will receive mobile coverage to allow the operation of a state-wide early warning system when emergency situations occur.

The new infrastructure will provide greater safety for the community by protecting lives and property in case of bushfire incidents.

The Community Emergency Mobile Communications Project is funded by the Department of Regional Development and Lands under the Royalties for Regions Program and managed by the Department of Commerce. The project was successfully delivered by Telstra.

President of the Donnybrook-Balingup Shire Council Steve Dilley said the project had enabled residents to have the same convenience and communication opportunities that 98 per cent of other Australians take for granted every day.

"This fantastic outcome has been achieved because of a team effort by a lot of people and a partnership between a commercial carrier and a number of Government agencies," Mr Dilley said.



(Above) President of the Donnybrook-Balingup Shire Council Steve Dilley. (Below) Community Emergency Mobile Communications Project stakeholders.

"The project not only provides communities with mobile phone coverage for their convenience, safety, business and educational needs, it also provides emergency services with vastly improved communications for their networks."

General Manager of the Digital Economy Branch at the Department of Commerce Mr Graeme Stephens said

as a result of Telstra and the WA Government working together, the infrastructure and the provision of services was delivered on time and is now commercially viable.

"The project demonstrates the positive outcomes that can be achieved through collaboration between Government and the private sector," Mr Stephens said.



Centre developing water research capabilities in WA



One of the monitoring bore points where water samples are being drawn prior to and during the trial. (Below) Ultra-filtration units at the Advanced Water Recycling Plant.

Western Australia's water future is looking crystal clear with the Curtin Water Quality Research Centre (CWQRC) undertaking world class research in water quality and treatment.

Director of CWQRC Associate Professor, Anna Heitz said the centre was becoming recognised worldwide for its comprehensive research expertise to identify and solve drinking water issues.

"In collaboration with nine other organisations, the centre was recently involved in a project on treating secondary wastewater for drinking

purposes through the Premier's Collaborative Research Program," Professor Heitz said.

"We developed a range of novel and advanced analytical chemistry methodologies for the analysis of ultra-trace concentrations of more than 220 micropollutants in wastewater using state-of-the-art instrumentation.

"At the time, there was no capability in Australia to undertake this type of work.

"This research helped to enable the development of a framework and guidelines for water utilities considering groundwater replenishment in Australia and underpinned a three year groundwater replenishment trial at Water Corporation's Beenypup facility in WA."

CWQRC is leading an Australian Research Council project in conjunction with this trial to examine further treatment options for complete removal

of the few micropollutants which survive the advanced treatment process.

Other areas of research within the centre include studies of natural and anthropogenic organic matter in source and treated waters, drinking water treatment, disinfection and disinfection byproduct formation, distribution system management and aesthetics in drinking water and wastewater.

CWQRC is also a member of the newly established National Centre of Excellence in Desalination, funded by the State and Federal governments.

The Curtin Water Quality Research Centre is a collaborative research alliance between Curtin University of Technology and the Water Corporation and is located at the state-of-the-art Curtin Resources and Chemistry Precinct.



Contact details

State of the Future is received by more than 4000 key industry representatives, local councils, media and other organisations. The newsletter is a great way to promote your business. In each issue we profile different companies within the science, technology, innovation, industry and enterprise fields.

If you have some news or a story to tell about what your company is up to for State of the Future please contact:

Department of Commerce
Science, Innovation and Business Division
Email: soft@commerce.wa.gov.au
Phone: 08 9263 8279



Government of Western Australia
Department of Commerce

