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WELCOME

Welcome to the second and 2008 "wrap up" edition of the Embedded Systems Australia newsletter.

Embedded Systems Australia is a horizontally-aligned, project-based national industry cluster. Our members are interested in developing embedded systems technologies and marketing smart products to global supply chains. The activities span the complete product lifecycle of embedded systems development and deployment. These include Design: electronics, software, computer aided design and methodologies; Manufacturing & systems integration to create competitive smart products for vertical applications; and Marketing, sales and support of embedded systems product development.

FEATURES

2008 Wrap Up

What happened in 2008? Here's an overview...

ESA Industry & Research Capability Directory

This directory was published in Oct 2008 based on data collected from an online survey. The directory is a booklet containing 74 industry and 18 research entries. In what might be an industry first, research applicability is mapped to industry capability via a common 'capability map' table.

The directory has generated a lot of buzz; at a recent student event, students were asking for copies so they could identify potential employers. We expect the 2009 version to be considerably bigger and better! A new online survey will be available early 2009.

The directory is free to all contributors. Contact us at ESA@nicta.com.au and we will mail you a copy of the 2008 directory.

Technology Roadmapping Workshop

Thorough roadmapping of an industry is a huge task; even more in the case of Embedded Systems where the industry being mapped touches on so many verticals.

What we achieved by the workshop was a valuable first cut, which fed into the project proposal and selection process.

EVENTS

Upcoming

We are planning several exciting events for the coming year located in NSW, Queensland and Victoria. We'll let you know details when the new Steering Committee has ratified the program.

And if we can wrangle it:

Imagine an auditorium full of high school students interacting with real robots listening to a world leader in robotics discuss and demonstrate how they work...

Plans for 2009

These are some of our plans for the coming year.

- The formation of a new Steering Committee comprised of sponsors and stakeholders.
- Several networking and project events around the Nation.
- Regular Newsletters
- Project teams formed and underway.
- The formation of ESA special interest groups in Queensland and Victoria
- A bigger and better Industry & Research Capability Directory accessible on-line.
- Movement towards a self-funded cluster model with several grades of sponsorship.

Thanks to John Humphreys for facilitating the process and to John & Janice Humphreys, Stuart Cumming and Neil Temperley for assembling the discussions into a cohesive summary.

We plan to extend this work in 2009.

Email ESA@nicta.com.au for a copy of the report.

Project Selection Workshops

Several project workshops held in 2008 helped us whittle down some 14 projects to a top four...

Four Projects "under construction"

ESA now has four project concepts in various stages of team formation.

Wireless Vehicle Communications via DSRC (aka DSRC — Dedicated Short Range Communications)

Tony Strasser (SKM) TDStrasser@skm.com.au is leading the charge to assemble the *DSRC:Connect* Team to deliver one or more demonstration projects in this space. Enabling wireless vehicle communications via DSRC is already in the production plan of several manufacturers of high-end vehicles. Vehicle to vehicle and vehicle to infrastructure communications unlocks many applications for safety (collision avoidance), congestion minimisation and business (tolling and payments). It will undoubtedly revolutionise the road user's experience. The potential for positive impact in Transport and Logistics has already attracted the strong support of the NSW Dept of State and Regional Development via a matching funds grant of \$100,000.

Meanwhile Neil Temperley (NICTA) is collecting data in attempt to analyse the business case behind the plethora of applications.

ESA is working closely with the AusDSRC www.ausdsr.com.au consortium.

For a short FAQ on this iconic project see the end of this Newsletter.

Assisted Living

How can technology improve the lifestyle and safety of the elderly or disabled living at home? Is it possible to make technology so easy to use that it elderly people will embrace it?

Mark Steiner (HETECH/Techome) mark@techome.com.au is leading the team exploring these possibilities.

Assisted Vision

Couple a miniature camera in a headset with some world-leading embedded system smarts and you get a system that can aid a visually impaired person to recognise the visual world — from identifying friends to find the margarine at the supermarket. John Oates (ResMed) JohnO@resmed.com.au is leading this team.

Funky Kiosk

This is a project that has been given new life as the ESA cluster mechanism has uncovered synergies between members. Innovative customised advertising and the potential to wirelessly download high definition movies in less than a minute are the ingredients to make the future kiosk funky and fun.

Chris Nicol (NICTA) Chris.Nicol@nicta.com.au is the interim leader of this team.

Artemis Orchestra

Australia's RoboClarinet entry won the challenging Artemis Orchestra competition in June this year. The fully robotic clarinet was designed and built by UNSW and NICTA. While the runner up — a Dutch robotic guitar — was technically brilliant, what

impressed the judges was the RoboClarinet's remarkable ability to produce (mostly!) high quality tone from this challenging instrument.

Two ESA members contributed to this success — a ResMed pump provide the 'lung' pressure and LX Innovations designed the circuit board.

Congratulations John Judge on orchestrating a gold medal performance! Plans are already underway for a 2009 entry.

Want to hear what a RoboClarinet sounds like and see it in action? Try this link:

<http://www.youtube.com/watch?v=mAIeTm4lO5Q>

Submissions

ESA presented two submissions this year:

One to the *Review of the National Innovation System* and a second to the *Review of Australia's Automotive Industry* (the 'Bracks' review). Copies of these can be found at

http://www.innovation.gov.au/innovationreview/Documents/246-Embedded_Systems_Australia.pdf and <http://www.innovation.gov.au/automotivereview/Pages/PublicSubmissions.aspx> respectively.

Grants

ESA was successful at attaining \$100,000 of NSW government support for its major project in Wireless Vehicle Communications (aka Dedicated Short Range Communications) applied to Transport and Logistics.

Many thanks to John Humphreys and Chris Nicol in preparing the submission, and to Michael O'Sullivan, Vikki Hine and Rachel Sieff of the Dept of State and Regional Development for driving the process at the government end.

Schools Program

ESA is liaising with careers advisors to devise outreach programs for secondary schools. Nick Fondas (iTech) nfondas@itechcorp.com.au is leading this team.

National Computer Science School

In collaboration with the National Computer Sciences Schools ESA is trialling a new on-line C language strand. The goal? — to teach year 11 high school students how to program robots. It doesn't get cooler than that.

NICTA is seeking ESA Members to serve as tutors in the NCSS Summer School this 3-12 Jan 2009. Please contact John Judge John.Judge@nicta.com.au if you can assist on any of these days. A special thanks to Prof. Rodney Brooks of MIT and iRobot for providing four robots for this Summer School.

More information can be found at www.ncss.edu.au.

Acknowledgements

I would like to thank those people who have done much of the work to get us to this point. John and Janice Humphries of Global Innovation Centre who serve as cluster mentors and event organisers. Thanks to NICTA for continuing to support this cluster activity. Thanks to the Warren Centre, the Department of State and Regional Development, our friends in AEEMA – now the Australian Industry Group and a special thanks to the many members of the ESA interim steering committee.

I hope you enjoy this newsletter, and that you will join with us to help strengthen Australia's competitive position in international embedded systems markets.

Sincerely,



Dr. Chris Nicol
Interim Chair

About ESA

Embedded Systems Australia was launched on Tuesday 11 December 2007 at the Premier's Reception Room in Governor Macquarie Tower. Its members are collaborating to strengthen the embedded systems and related industries in Australia. The cluster aims to provide the following business benefits to participating companies:

- expanded market opportunities
- resource exchange
- joint tendering
- identification of skills and synergies
- development of leads in new markets

The initial cluster consortium is representative of prominent companies, industry associations, NSW government and ICT research. The organisations exploring the cluster establishment include: AiGroup, BCS Innovations, CiSRA (Canon), Cochlear, Global Innovations Centre, iTech, Invetech, Machinery Automation Robotics, Microsoft, NICTA, NSW Department of State & Regional Development, ResMed, Sinclair Knight Merz and The Warren Centre.

The cluster chairman is NICTA's CTO of Embedded Systems Dr Chris Nicol.

Sound Bytes

"This became a credo of mine – attempt the impossible in order to improve your work." ~ Bette Davis

Contacts

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ESA Founding Steering Committee Members



Focus on Wireless Vehicle Communications via DSRC (Dedicated Short Range Communications)

With the announcement on the 10/11/8 of valuable seed funding from the NSW Government we think it is appropriate to answer some of the questions that the cluster members may have.

Can there be more than one Wireless Vehicle Communications project?

Definitely. A great result would be to have several projects demonstrating different applications in different states.

What will decide the project?

The exact scope of the Wireless Vehicle Communications project(s) is not yet decided. ESA wants its projects to have commercial potential. Therefore the ideal project is customer-driven with a strong customer lead. Candidates include transport and logistics, tolling and safety applications on a motorway, pedestrian crossings and school zone safety, and infrastructure damage protection (tunnels and bridges).

How is a project funded?

The NSW Government have been very generous in providing vital seed funding towards transport and logistics related applications. However, regardless of the project, the bulk of resources will come from team members, e.g. in-kind and cash.

What factors determine which companies are on a project team?

A successful project will require strong collaboration built on goodwill and trust. Furthermore, each member must be convinced that their team mates are adding value and working for the good of the group. We expect that to a large extent a team will be self-selecting. The cluster executive will manage a voting process if this helps team formation. Note that each project team member will be required to be a cluster sponsor which will support the general cluster program for the year.

If you have not already registered your interest in being part of the *DSRC:Connect* Team that will deliver these projects, it is vital that you register your interest with Tony Strasser (SKM) TStrasser@skm.com.au ASAP!

What about IP?

Ultimately a team must decide the nature of the project agreement. We propose the following proven IP model for the *DSRC:Connect* Team partners:

- *Background IP (i.e. pre-existing IP):*
 - Partners may use freely within the project.
 - Owning partner must licence (for royalty) if required to enable use of Foreground IP.
- *Foreground IP (i.e. new IP created within the project):*
 - Creating Partner owns solely or jointly.
 - Owner can freely on-sell or sub-license without accounting.
 - Other Partners granted non-exclusive, royalty-free licences for own use and exploitation.
 - Creating Partner may freely license to others without consent or accounting.
 - Non-owners may not license or disclose to others except where inherent in their own products.

What is the timeframe for the seed funding?

NSW Government is offering up to \$100,000 on condition that matching funding be raised. The required timeframe is to have an appropriate project scoped out, along with team and matched funding all in place by *mid-June 2009*.

How do I get involved?

Contact Tony Strasser (SKM), *DSRC:Connect* interim leader at TStrasser@skm.com.au.