



## Australian Safety Critical Systems Association

A National Special Interest Group of the



# Newsletter

June 2009

## From the Chair

The recent spate of a number of civil aviation accidents was featured in [aSCSa Dec-2008 newsletter](#). Sadly on 01 June 2009, an Air France Airbus A330-203, registration F-GZCP [crashed](#) at sea, off the coast of Brazil while on a trans-Atlantic flight from Rio de Janeiro to Paris. On board were 12 crew and 216 passengers. The "black box" recorders have yet to be found and so the cause of the crash has not yet been identified. Speculation is that the cause is related to the airspeed sensors.

Melbourne, Australia could have been the scene for a major air accident earlier this year. On 20 March 2009, a United Arab Emirates Airbus A340-500 suffered a tail strike on take-off. The [ATSB](#) has released an interim [report](#). A commentary on this report is included in this newsletter.

It's just not air industry events that make news. On 22 June 2009, a train collision occurred on the Washington Metropolitan Area Transit Authority system resulting in 9 deaths and 80 serious injuries.

The aSCSa Committee has been very active arranging the 2009 Conference and hosting the fifth annual five day York University course - *Introduction to System Safety Engineering and Management* in association with the Australian National University (ANU). I thank the ANU again for co-hosting this event.

I'm looking forward to seeing you all at the ISSEC Canberra Conference.

**George Nikandros**  
**National Chairman**



**ISSEC Details..**

Venue: National Convention Centre Canberra

Date: 10-12 August 2009

Co-locating with Project Management Australia Conference. Click here for weblink.

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ISSEC 2009 and incorporating the 14<sup>th</sup> Australian Safety Critical Systems Association National Conference on Safety Related Systems.

## Keynote Speakers



[Joe Jarzombek](#), Director Software Assurance, U.S. Department of Homeland Security

The relevance of software security in reducing risk exposure for project management.

Please note: this presentation is subject to Final Approval by US Department of Homeland Security.



[Felix Redmill](#), Consultant & Trainer, UK.

How to significantly improve control and effectiveness across a project's entire life cycle by applying techniques for risk-based decision-making in software engineering and project management.

## Additional Keynote Speakers

[Rob Thomsett](#), Thomsett International

[Shireane McKinnie](#), DMO

[Richard Turner](#), Steven's Institute of Technology

[Michael Pascoe](#), Associate Editor Eureka Report

[John Duddy](#), Boeing Defence Australia

[Bruce Ferguson](#), AIBA/Helmsman International

[Bob McGannon PMP](#), Mindavation

[Lloyd Carter](#), Carter Management Group

[Prof Li Shirong](#), CIOB Australasia

## Tutorial

### What makes software suitable for high-integrity applications?

Presenter: Prof Felix Redmill

Monday 10 August 2009

More Information?

Visit [ISSEC Website](#)

[REGISTER NOW](#)

See Pages 3 and 7 for more details

# Annual General Meeting

The 2009 Annual General Meeting will be held on Tuesday, 11 August 2009 in conjunction with the ISSEC 2009 Conference in the Fitzroy Room at the Canberra Convention Centre Canberra ACT.

The meeting will commence 5.15pm.

Nominations to join the committee can be made up to the time of the AGM. Please contact the Chairman. There is no requirement for aSCSa committee members to be ACS members.

## Association Matters

### National Committee

|                    |  |
|--------------------|--|
| George Nikandros   | Chairman   |
| Kevin Anderson     | Secretary  |
| Chris Edwards      | Treasurer  |
| Tony Cant          | Workshop Program Chair   |
| Clive Boughton     | Certification & Canberra Chapter Chairman                          |
| Robert Worthington | (standing down 30 June 2009)                                       |
| David Goedecke     | (standing down 30 June 2009)                                       |
| Allan Coxson       |  |
| Tariq Mahmood      |  |
| BJ Martin          |  |
| <b>Web Site</b>    | <a href="http://www.safety-club.org.au">www.safety-club.org.au</a> |

The term of the current committee expires 30 June 2009. As per the constitution the 2009/10 chairman is elected by the outgoing committee and all other committee positions are declared vacant. In accordance with the Constitution, the 2009/10 chairman was elected by the committee at the June 2008 Committee meeting. George Nikandros will continue as chairman for 2009/10.

Two committee members, namely David Goedecke and Rob Worthington have decided to stand down. The other committee members have nominated to continue as committee members for 2009/10.

Both Rob and David, despite their very busy "day" jobs, contributed much to the aSCSa.

Rob Worthington joined the committee on 08 December 2003. He attended a committee meeting that day as a guest and was invited to become a committee member. Rob's acceptance continued the long-standing representation of Airservices Australia.

David Goedecke was elected a member of the committee at the Annual General Meeting on 25 August 2005. Through David joining the committee, there was for the first time representation from the Emergency Services sector.

Unfortunately Rob's and David's decisions to stand down have substantially reduced the committee membership. Anyone interested in being a committee member is invited to contact the Association's Chairman prior to the 2009 AGM to be held 11 August 2009. The good news is that Airservices is likely to

continue its representation on the committee with the nomination of Rob Weaver.

*Continues Page 3*

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## ISSEC 2009 Tutorial Safety stream

*What makes software suitable for high-integrity applications?*

**Presenter: Prof Felix Redmill**

The field of system safety has led the way in risk-based development and assessment. In particular, its focus is to predict and prevent things going wrong rather than merely finding and fixing them when they do.

Importantly, the approaches, techniques, and way of thinking are all relevant – and in future will be essential – to the development of high-integrity systems in all domains, such as finance-critical and mission-critical systems.

This tutorial offers an insight, from the perspective of software, into these approaches. It explains risk and its application to predicting how things can go wrong and to building confidence that they won't.

The tutorial lays out the subject for safety engineers and managers. It also introduces all software engineers and managers to how these practices, developed in the safety field, can be applied in other contexts – and why they should be.

Other tutorial events are also offered both prior and during the conference. Details can be found on the ISSEC [website](#).

### Post Conference Presentations

Felix will also make two post conference presentations based on this tutorial in Melbourne and Brisbane. The Brisbane presentation has been arranged in association with the Risk Engineering Society Queensland, for 5.45pm, Tuesday, 18 August 2009 at the Hawken Auditorium, Engineering House 447 Upper Edward Street. The Melbourne event is yet to be finalised. To register for these events visit the [ACS Events](#) website. (*Ed note – at the time of publication both events have yet to appear on the ACS website.*)

| <b>Introduction to System Safety Engineering and Management</b>   |   |
|---|---|
| Day 1   | <ul style="list-style-type: none"> <li>• Introduction and Safety Concepts</li> <li>• Development for Safety</li> <li>• Preliminary Hazard Identification &amp; Case Study</li> <li>• Modelling Event Sequences</li> <li>• Case Study: Chemical Containment Fault Tree</li> <li>• Risk Assessment</li> </ul> |
| Day 2   | <ul style="list-style-type: none"> <li>• Functional Hazard Assessment</li> <li>• Case Study: ARP4761 WBS FHA</li> <li>• HAZOP</li> <li>• Case Study: Process Plant HAZOP</li> <li>• Systematic failure</li> <li>• Safety Integrity levels</li> </ul>  |
| Day 3   | <ul style="list-style-type: none"> <li>• Safety Analysis techniques 1</li> <li>• Case Study: AGV Fault Tree and FMEA</li> <li>• Safety Cases 1</li> <li>• Case Study: Safety Case Construction</li> <li>• Safety Cases 2</li> </ul>   |
| Day 4   | <ul style="list-style-type: none"> <li>• Safety Analysis Techniques 2</li> <li>• Preliminary System Safety Assessment</li> <li>• Case Study: ARP 4761 WBS PSSA and SSA review</li> <li>• Common Cause Analysis</li> <li>• Safety case: Common Causes</li> <li>• Introduction to Software Safety</li> </ul>  |
| Day 5   | <ul style="list-style-type: none"> <li>• Safety Management</li> <li>• Case Study: AGV Safety Management</li> <li>• Human factors</li> <li>• Safety Culture</li> <li>• Conclusions</li> <li>• Bibliography</li> <li>• Glossary</li> </ul>  |
| <p><b>Australian National University</b><br/> <b>April 2010</b><br/> <b>(Dates to be confirmed)</b></p> <p>Contact aSCSa Secretary to register interest and for more information<br/> <b>Early bird discounts</b></p> |   |

## Association Matters

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### Membership

In May 2009, a new membership application and renewal system was introduced. The new membership system is hosted by the Australian Computer Society on behalf of the aSCSa.

The enable this change the membership year has been changed from financial year to calendar year. Members, who are financial to 30 June 2009, are deemed to be financial to 31 December 2009.

The main benefits are that membership applications and renewal payments can now be made on line and members can update their details as they change. All financial members should have received an email advising them of their membership number and password.

Membership renewal notices will be issued in October 2009.

In addition aSCSa members are now eligible for ACS member discounts for ACS events and promotions.

## Research Award

In the December 2006 Newsletter, the aSCSa announced the establishment of student research award. The rules governing the award and associated forms are available from the aSCSa website:

[www.safety-club.org.au/research\\_award.html](http://www.safety-club.org.au/research_award.html).

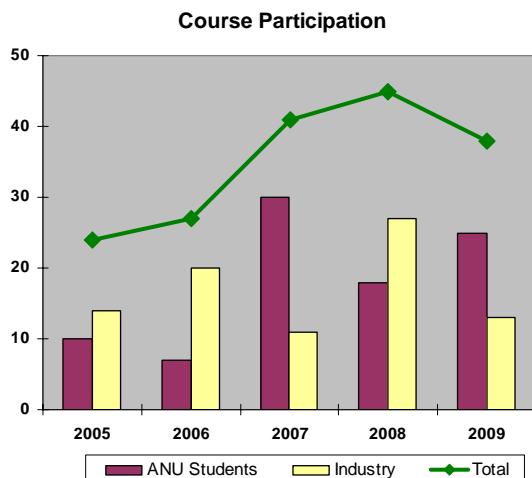
The purpose of the award is to encourage Australian research in the science of software/system engineering or the application of that science for safety and/or mission critical software-intensive systems. At \$5000, it is a substantial award.

One nomination was received and is being evaluated.

## Education - Safety Critical Systems

For the fifth consecutive year, the aSCSa and the ANU facilitated the University of York's High Integrity Systems unit's 5 day intensive course on *Introduction to System Safety Engineering and Management*. The course is an elective within the ANU Masters of Software Engineering program and industry participants are encouraged to attend through advertising by aSCSa.

This year there were 38 participants. There were 25 MSE students (18 in 2008) and 13 industry participants (27 in 2008). Over the five years 175 people have undertaken the course.



The course will be running again next year (see advert). Once the date has been finalised, aSCSa will advertise for industry participants. There are no prerequisites for participation.

## Book Reviews



**Safety Management Systems in Aviation**, by Alan J. Stolzer, Carl D. Halford and John J. Goglia, Aldershot, Ashgate, 2008, xxiii + 297 pp., £60.00 (hardback), ISBN 9780754673040

**Reviewer:** David M Clarke, UK  
[Dave.Clarke@rolls-royce.com](mailto:Dave.Clarke@rolls-royce.com)

The aviation industry is facing a safety challenge. On the one hand, while accident rates have declined for several decades, they currently seem to have reached a plateau. On the other, the number of airline departures is rising dramatically. Use of safety management systems (SMS) as described by Stolzer, Halford and Goglia is seen as a way of meeting this challenge. Their book provides an account of SMS grounded in the quality approach, using quality thinking and tools to support safety management. It has been written for practicing professionals and students of safety in the US aviation industry. However, Safety Management Systems in Aviation is valuable for all those interested in learning about SMS, regardless of country or domain.

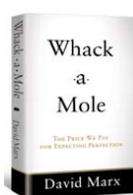
The authors provide an introduction to SMS and historical background to the evolution of safety in US aviation. A substantial description is provided of quality principles, techniques and management, which lie at the heart of the approach advocated in the book. The identification of hazards, assessment of risk and control of risk are described at length and an account is given of the importance of rigorous and consistent classification in SMS. In discussing the use of processes in safety risk management and safety assurance, useful guidance is given on the generation of well-designed process descriptions. A SMS must itself be managed and a view of how this can be achieved is presented. After a description of system safety tools and analysis methods, the main text closes with a discussion of SMS implementation within an organization, including a staged process for change.

A large number of techniques are described in the book. Examples from the quality discipline include

flowcharts, Pareto charts, cause-and-effect diagrams, affinity diagrams and the Plan-Do-Check-Act cycle. System safety techniques outlined include failure modes and effects analysis, fault tree analysis, hazard and operability tool, probabilistic risk assessment and Monte Carlo methods. Significant space is given to a description of data mining. Because of the breadth of subject matter in SMS and the constraints of a single volume, the presentation of some techniques is brief.

The strengths of the book include the wide range of issues covered, the stress on proactive and predictive approaches that go beyond the traditional reactive approach to safety in aviation, and the highly effective use of examples to illustrate the application of SMS in practice (most are from the airline sector of the industry). However, the outstanding features of the book are the grounding of the approach to SMS in quality principles and the clear demonstration of the value of quality thinking and tools in this context.

Some have expressed a concern that quality approaches can focus on components in isolation and neglect interactions that lead to system failures. However, while this can be a pitfall, the authors strongly advocate the application of systems thinking to ensure that engineers and managers see not only specific events but also overall patterns in the system.



**Whack-a-Mole: The price we pay for expecting perfection**, by David Marx

[www.WhackaMolethebook.com](http://www.WhackaMolethebook.com)

**Reviewer:** K. Scott Griffith, Outcome Engineer, LLC, [www.outcome-eng.com](http://www.outcome-eng.com)

Whack-a-Mole explores the role of human error in society, from aviation and healthcare, to driving and parenting—and where accountability rests for those errors, especially when they take the life of another. David Marx argues that regulatory and human resource prohibitions, along with the criminal prosecution of human error, have been counter-productive to helping society deal with the risks and consequences of human fallibility. Marx advocates a different approach to addressing our shared fallibility.

David Marx has devoted the past 20 years of his life to managing human error through the integration of systems engineering, human factors, and the law. He's focused his efforts on helping high-consequence industries develop safety supportive practices and culture. Now he's delivering the Just Culture message to a whole new audience.

I am very pleased to announce that my friend and colleague, David Marx, has written his first book. Our team at Outcome Engineering was thrilled to participate in the review process, and we are excited with the way David presents Just Culture principles to the general public. While error and harm are unavoidable side effects of life, David argues in Whack-a-Mole that we can reduce our one-in-21 odds of accidental death. Using his uniquely insightful and often humorous stories, he urges readers to rethink what it means to be accountable for their actions.

David addresses regulators, attorneys, corporate CEOs, public policy makers, the media and even parents, illustrating that current social perspectives toward human fallibility hinder our collective efforts to make the world a safer place. He advocates giving up some of our rights to sue each other, abandoning the no harm, no foul approach to personal accountability, rewriting regulations and corporate policies that outlaw human error, and even rethinking how we respond to our children's mistakes.

While the book will be released nationally on August 21st, we're shipping pre-release copies now. If you would like to purchase your copy now, we invite you to visit the book's [website](#) or contact us at [Outcome Engineering](#).

## aSCSa Constitution – Proposed Changes

The following paragraphs show the proposed changes to the aSCSa Constitution as agreed at the aSCSa Committee held 01 June, 2009.

These changes are required to allow the administration of the aSCSa membership by the ACS.

The changes relate to membership. The membership year had to change from financial year to calendar year, and the classes of membership had to be reduced to two; those that are ACS members and those that are not.

"Red" text indicates new text; "~~struck out blue~~" text indicates deleted text.

6.3 There shall be ~~four~~ two grades of membership as follows:

6.3.1 ~~Members~~ All those joining the Association will have the membership grade of Member.

a) ~~Unless qualified for another grade of membership, all those joining the Association will have the membership grade of Member.~~

b) ~~All members joining in the foundation year of the Association are recognised as foundation members of the Association.~~

6.3.2 ~~Student Membership shall be open to persons under 25 years of age as at January 1 who are attending a full time tertiary study.~~

6.3.3 ~~Retired membership is available to those who wish to continue their association with the Association after retirement from full time employment. Such appointment would normally be accompanied by a reduction in annual subscription, such reduction being determined by the National Committee.~~

6.3.4 ~~Life members shall pay no membership subscription and shall be appointed at the discretion of the committee.~~

6.4 ~~Except for Life Members who are elected by the National Committee only, the The Executive Committee and Chapter Committees are empowered by this Constitution to accept applications for membership or change of class membership in accordance with National Committee policy and directions pertaining at the time. The National Committee retains the power to review and to refuse an application without necessarily providing a reason for its refusal.~~

6.5 Applications from non members of the Australian Computer Society proposing to be admitted to the Association shall be in writing signed by the candidate and countersigned by a member of the National Committee or by the local Chapter Chair to which the member is applying. The application shall be on an official application form prescribed by the National Committee, setting out name, occupation, usual residence and endorsement of a member of the National Committee or the local Chapter Chair. The form shall contain a clause that the candidate agrees to conform to the Constitution of the Association and By Laws of the Chapter of affiliation, if admitted.

6.6 Applications for membership from members of the Australian Computer Society shall be accepted upon payment application and payment of the prescribed membership fee of the prescribed fee to the National Secretary with the Association's prescribed application form.

6.7 Except for ACS members, every ~~Every~~ proposal for admission shall be accompanied by the annual fee and an entrance fee as set by the National Committee from time to time and shall be sent either through the Chapter with which the candidate wishes to be affiliated, or directly, to the National Secretary. ~~ACS members shall pay no fee.~~

6.8 The National Secretary shall arrange for ~~unsuccessful candidates to be notified of their election.~~

6.9 Only ~~Life Members, Members and Retired Members~~ shall be entitled to vote, each such Member having one vote.

6.11 ~~On a poll, votes may be given either personally or by proxy.~~

6.12 ~~The instruments appointing a proxy shall be in writing in a form approved by the National Committee under the hand of the appointer, and shall be in the hand of the National Secretary of the respective meeting before the start of the meeting.~~

6.17 The Association shall keep ~~at its registered office~~ a Register of Members. The National Secretary shall be responsible for maintaining this register ~~at the registered office~~.

8.2 The Association's fiscal year shall extend from July 1st to June 30th. ~~The Association's membership year shall extend from January 1<sup>st</sup>, to December 31<sup>st</sup>.~~

8.4 Members shall pay annual subscriptions and entry fees at rates to be determined by the National Committee from time to time. The National Committee shall have power to make such rules as it sees fit and to define the proportion of annual subscription payable by new members in respect of the remainder of year in which they become members of the Association. ~~Members, who are members of the Society, shall pay a lower membership fee, than those members who are not members of the Society.~~

12.1.8 General Business appropriate to the Annual General Meeting, ~~including changes to the Constitution.~~

13.17 The National Chairman, upon stepping down from office, remains a member of the ~~Council~~ National Committee for one year as ex officio, Immediate Past National Chairman.

## Aircraft Incident – Melbourne March 2009

**Source:** Tail Strike, Melbourne Airport, VIC: 20 March 2009: A6-ERG Airbus A340-500: [ATSB Transport Safety Report: Accident Occurrence Investigation – AO-2009-012 Preliminary](#).

At 2231 Australian Eastern Daylight-saving time, a United Arab Emirates Airbus A340-500, registered as A6-ERG, commenced take-off on a scheduled passenger flight to Dubai. On board were 257 passengers, 14 cabin crew, and 4 flight crew.

The take-off was planned as a reduced-power take-off. As the name suggests, a reduced-power take-off is a take-off carried out at less than available engine thrust.

The first officer was the handing pilot. At 53 seconds into the take-off, the captain called for the first officer to raise the nose of the aircraft in order to become airborne. The plane did no immediately respond, so the first officer applied a greater nose-up command.

The nose of the aircraft was raised and the tail made contact with the runway surface but the plane failed to climb. The captain then selected the take-off and go-around (TOGA) thrust setting, the maximum thrust the engines can apply. The engines responded immediately and the plane began to climb.

The crew notified air traffic control of the tail strike and returned to Melbourne. The aircraft landed safely with no reported injuries. The tail strike resulted in substantial damage to the tail of the aircraft and damage to some airport lighting and the instrument landing system.

It is clear that there was insufficient thrust applied during the initial stage of the take-off such that there was insufficient runway available which forced the captain to select the TODA thrust setting resulting in the tail strike.

Why the insufficient thrust? A review of the aircraft's performance documentation showed that the take-off weight was understated by some 100 tonnes (100,000kg).

According to the ATSB preliminary report, the weight and balance data for the particular aircraft are:

|                                 |            |
|---------------------------------|------------|
| Maximum Take-Off Weight         | 372,000 kg |
| Maximum Landing Weight          | 243,000 kg |
| Zero fuel weight on flight plan | 226,600 kg |
| Take-off weight on flight plan  | 362,900 kg |
| Approximate landing weight      | 280,000 kg |

The magnitude of the take-off weight underestimate was significant. So why was the error not detected?

Whilst this is still subject of investigation, the process for calculating take-off performance gives some clues as to the likely source of the error.

The aircraft's operator utilised the Airbus Less Paper Cockpit (LPC) system; a laptop computer system which replaces the majority of the aircraft's operating documentation. The LPC contained a tool for calculating take-off performance.

The take-off performance calculation required input of various parameters, including take-off weight, temperature, air pressure, wind, the runway being used and the status of the aircraft systems that affect performance. Information regarding the runway e.g. length, was contained in a database in the LPC system. The LPC tool computed the calculated take-off reference speeds, aircraft configuration and Flex (for flexible take-off thrust, used for reduced power take-off) temperature. The results of the take-off performance

calculation were then manually entered into the aircraft's flight management and guidance computer.

The aircraft carried two laptops; one used for the operation and a backup.

The LPC is analogous to the Mission Planning System (MPS) used or being acquired by Defence for aircraft and battle management.

The preliminary investigation did not cover the procedures relating to the use of the laptop and LPC system. It is unclear if the error occurred when the aircraft's flight specific data was initially loaded onto the laptop by ground staff, or the paperwork was incorrect, or the crew member made an error when entering the parameter values into the LPC system or the LPC results into the aircraft's flight management and guidance computer.

Seeing that there were two laptops, one would have thought that the captain and first officer would have each performed the task and compared results to ensure that there was no user entry error. The fact that one laptop was considered a backup, suggests that only one was used and that only one person performed the task. Whether this process was required to be done under supervision of another flight crew member is unknown. In any case this would seem to be a flawed process as there is a reasonable risk of a non-detected human error.

The form of the output from the LPC is not disclosed. Whether it is of the form that non-sensible results would be obvious is not known. It certainly didn't ring any alarm bells to the flight crew.

It would seem at the very least that the LPC should have been able to detect the erroneous result of that magnitude, assuming that the input data was incorrect, based on the departure airport, destination and nature of the flight.

This incident highlights the criticality of the "electronic flight bag".

Most MPS have not been designed from a strong HMI hazard management safety program or high software development assurance levels, are built on windows-based operating systems, but are expected to be used in the context of aircrew checks and balances of outputs to ensure dumb answers from erroneous inputs or miscalculation are caught and corrected before use.

While this extract comes from the preliminary report and other factors may yet come to light, it highlights that operational safety oversight may need to be exercised beyond the cockpit of the aircraft. If a MPS has the potential to directly impact the safety (in this case, incorrect data entry leading to degraded takeoff performance) of an aircraft, and limited safety assurance of the design, then it should be appropriate for operational safety management controls to be applied to its use i.e.; training, competency and currency, compliance assurance etc.

| MONDAY 10 AUGUST 2009 – PRE CONFERENCE WORKSHOPS                                |   |  |   |   |  |
|---|---|--|---|---|--|
| 0800 - 0900   | Registration and Arrival Tea & Coffee<br>Preconference Workshops  |  |   |   |  |
|   | Systems Engineering Workshop<br>Nicholls Theatrette   | Workshop<br>Fitzroy Room   | Measurement & Quality Workshop<br>Murray Room   | Safety Workshop<br>Sutherland Theatrette  |  |
| 0900 – 1500<br><i>Morning Tea</i><br>1030 – 1100<br><i>Lunch</i><br>1230 – 1330 | Richard Turner, Stevens Institute<br><br>Methods, Processes and Tools for Systems Engineering in an Agile World   | Kenneth Hong Fong,<br>Office of the Deputy Under Secretary of Defense for Acquisition and Technology)<br>Systems and Software Engineering<br><br>Systems Engineering for Systems Assurance: Building Security into the System<br><br>Program Protection Planning: Identifying and Protecting Critical Program Functionality<br><br>Supply Chain Risk Management: What's in your system and where did it come from? | Julian Day, QESP<br><br>Significance of Metrics in Enhancing Software Quality: Expanding Quality by Utilisation of Quantity | Felix Redmill, Consultant and Trainer<br><br>What makes Software Suitable for High-Integrity Applications |  |
| 1500 - 1530   | Afternoon Tea   |  |   |   |  |
|   | <b>Joint ISSEC and PMOZ Opening and Plenary</b><br>Royal Theatre  |  |   |   |  |
| 1530 - 1535   | Toby Travanner, MC Welcome  |  |   |   |  |
| 1535 - 1555   | Official Welcome & Opening  |  |   |   |  |
| 1555 - 1635   | Keynote: Rob Thomsett, Change is always a cultural challenge: effectively implementing the Gershon Report   |  |   |   |  |
| 1635 - 1705   | Keynote: Robert McGannon, Intelligent Disobedience  |  |   |   |  |
| 1705 - 1710   | Toby Travanner, MC Session close  |  |   |   |  |
| 1800  | Assemble for Bus departure to Australian War Memorial   |  |   |   |  |
| 1830 - 2030   | <b>Joint PMOZ and ISSEC Welcome Reception</b><br>Australian War Memorial  |  |   |   |  |
| TUESDAY 11 AUGUST 2009  |   |  |   |   |  |
| 0800 - 0830   | Registration and Arrival Tea & Coffee   |  |   |   |  |
|   | <b>Joint ISSEC and PMOZ Plenary</b><br>Royal Theatre  |  |   |   |  |
| 0830 - 0930   | Keynote: Joe Jarzombek, U.S Department of Homeland Security, Security-Enhanced Project Management and Software/Systems Engineering: Mitigating Risks to the Enterprise ( <i>Subject to Final Approval by US Department of Homeland Security</i> ) |  |   |   |  |
| 0930 - 1030   | Keynote: Michael Pascoe, EurekaReport.com.au, What the headlines don't tell you: the economy ahead...don't waste a good crisis  |  |   |   |  |
| 1030 - 1100   | <b>Morning Tea</b>  |  |   |   |  |
|   | <b>ISSEC Plenary</b><br>Ballroom  |  |   |   |  |
| 1100 - 1145   | Keynote: Shireane McKinnie, Head, Acquisition and Sustainment Reform Division (HASRD, Defence Materiel Organisation)  |  |   |   |  |
| 1145 - 1230   | Keynote: Richard Turner, Steven's Institute of Technology, Sibling Rivalry: Integrating systems and software engineering  |  |   |   |  |
| 1230 - 1330   | <b>Lunch</b>  |  |   |   |  |
|   | <b>Agility</b><br>Ballroom  | <b>Lessons Learnt &amp; Paradigms</b><br>Menzies Theatrette  | <b>Models &amp; Estimation</b><br>Bradman Theatrette  | <b>Security</b><br>Fitzroy Room   | <b>ISSEC &amp; PMOZ Workshop</b><br>Murray Room  |
| 1330 - 1415   | SW Tony Butt<br>An Agile Process for a Mixed Engineering Environment  | SI * Quoc Do<br>Systems Engineering<br>Microcosm Sandpit   | PI Mark Staples<br>Implementing CMMI Specific Practices Incrementally – Where Do You Start?                                 | SF * Bruce Hunter<br>Integrating safety and security into the system lifecycle                            | Terry Rout, Software Quality Institute<br><br>The role and application of ISO/IEC 15504 – Process Assessment |
| 1415 - 1500   | PI Martyn Kibel<br>Embedding Delivery Accelerators into Technology Delivery Lifecycles  | SF * Tim Miller<br>What can the Agent Paradigm Offer Safety Engineering?   | SW Michael Irrgang<br>Software Estimation using High Level Function Points  | SE Mike Reed<br>People, Policy and Technology: Considerations in Designing a Robust Security Framework    |  |
| 1500 - 1530   | <b>Afternoon Tea</b>  |  |   |   |  |
|   | <b>ISSEC Industry Panel</b><br>Chairperson: Dr Nanda Nandagopal, Defence Materiel Organisation<br>Ballroom  |  |   |   |  |
| 1530 - 1700   | Industry Panel Session  |  |   |   |  |
| 1900 - 2100   | <b>Joint PMOZ and ISSEC Conference Dinner</b><br>National Convention Centre Canberra  |  |   |   |  |

**SE** Systems Engineering    **SI** System Integration    **SW** Software Engineering    **PI** Process Improvement    **SF** Safety Management & Engineering

| WEDNESDAY 12 AUGUST 2009 |  |  |  |   |   |
|--------------------------|--|--|--|---|---|
| 0800 - 0845              | Registration and Arrival Tea & Coffee  |  |  |   |   |
|                          | ISSEC Plenary<br>Ballroom  |  |  |   |   |
| 0845 - 0945              | Keynote: Felix Redmill, Consultant and Trainer,<br>Bringing Risk-based Approaches to Software Development Projects   |  |  |   |   |
| 0945 - 1030              | Keynote: John Duddy, Vice President and Managing Director, Boeing Defence Australia,<br>People working together as a global enterprise                       |  |  |   |   |
| 1030 - 1100              | Morning Tea  |  |  |   |   |
|                          | Sys & Sware Assurance<br>Ballroom  | Architectures<br>Menzies Theatre   | Small Settings<br>Bradman Theatre  | Modelling<br>Fitzroy Room   | ISSEC & PMOZ Workshop<br>Murray Room      |
| 1100 - 1145              | <b>PI</b> Matt Ashford<br>System Assurance –<br>Defending against the Cyber<br>Threat  | <b>SW</b> * Trevor Harrison<br>Design Uncertainty Theory:<br>Evaluating Architecture<br>Completeness by Evaluating the<br>Speed of Decision Making | <b>SE</b> Phillip Relf<br>Systems Engineering in-the-<br>small: A precursor to<br>Systems Engineering in-the-<br>large | <b>SF</b> * Tony Cant<br>Model-Based Safety Cases<br>using the HIVE Writer  | Leon Sterling<br>Agent-Oriented Modelling |
| 1145 - 1230              | <b>SF</b> Jason Dean<br>System Safety and Software<br>Assurance: Mistakes Made<br>and Lessons Learnt   | <b>SI</b> * Ruth Gani<br>Making Architectures Work for<br>Analysis   | <b>PI</b> Chris O'Brien<br>Stepping Over Pebbles – a<br>framework for tiny projects                                    | <b>SW</b> Abbass Ghanbari<br>Requirements Modelling of<br>Business Web Applications:<br>Challenges and Solutions  |   |
| 1230 - 1330              | Lunch  |  |  |   |   |
|                          | Specifications &<br>Requirement<br>Ballroom  | Modelling<br>Menzies Theatre   | Hazard & Risk<br>Bradman Theatre   | Complexity<br>Fitzroy Room  |   |
| 1330 - 1415              | <b>SW</b> Phillip Dart<br>The Claytons Specification   | <b>SI</b> * Peter Brown<br>Improving the Dynamic Project<br>Work Model   | <b>SF</b> * Chris Edwards<br>The Application of Hazard<br>Risk Analysis in Safety<br>Standards                         | <b>PI</b> Heath James<br>The Use of Modelling and<br>Analysis to Support V&V in<br>Complex Systems<br>Integration |   |
| 1415 - 1500              | <b>SE</b> Fred Hardtke<br>Developing Combat System<br>Support requirements at the<br>same time Combat System<br>Shit Fit requirements are<br>being developed | <b>PI</b> * David Tuffley<br>Applying Behaviour Engineering<br>to Process Modelling  | <b>SW</b> Paul Bannerman<br>Risk Implications of Systems<br>and Software Project<br>Organisation Structures            | <b>SF</b> * George Nikandros<br>Complexity and Safety: A<br>Case Study  |   |
| 1500 - 1530              | Afternoon Tea  |  |  |   |   |
|                          | <b>Joint ISSEC and PMOZ Closing Session</b><br>Royal Theatre (TBC)   |  |  |   |   |
| 1530 - 1600              | Bruce Ferguson, Critical Thinking - An Executive Approach to a Sustainable and Reliable Execution  |  |  |   |   |
| 1600 - 1700              | Panel Session, Seeing the Right People   |  |  |   |   |

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