

# Wednesday, 12 July

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**0700-0745**

**Speakers/Session Chairs' Breakfast** – *ChampionsGate*

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**0700-0800**

**Continental Breakfast** – *Foyer*

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**0700-1700**

**Symposium Registration** – *Rotunda*

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**0700-1800**

**Speaker Ready Room** – *Wentworth*

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**0700-1900**

**Cyber Café** *sponsored by Boeing* – *St. Andrew A*

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**0800-0930**

**Wednesday Keynote Speaker** – *National CD* - See page 59

**Systems Engineering to Exploit Transformational Opportunities in Tomorrow's Markets**

Robert Stow, *BAE Systems*

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**0930-1000**

**Coffee Break in Exhibit Hall**

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**0930-1930**

**Exhibits Open**

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**0945-1715**

**Full Day Optional Tutorials (Ticket Required)** - See page 62

**Tutorial F05**

**Architecture Frameworks and Modeling**

James N. Martin, *The Aerospace Corporation*

**Location:** *Royal Melbourne A*

**Tutorial F06**

**An Effective Specification Development Algorithm**

Jeffrey O. Grady,

*JOG System Engineering, Inc.*

**Location:** *Royal Melbourne B*

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**1000-1130**

**SESSION 7: Technical Paper & Panel Tracks & Working Group Presentations -**

See page 54

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**1000-1800**

**INCOSE Meetings** - See **INCOSE Business Meetings** - pg 159

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**1010-1615**

**Key Reserve Presentations** – *ChampionsGate*

See page 57

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# Wednesday, 12 July *(continued)*

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## 1130-1300

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*Lunch in Exhibit Hall*

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## 1300-1700

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**Half-Day Optional Tutorials (*Ticket Required*)** - See page 63

**Tutorial H05**                    **Competitive Systems Engineering: How to do System Engineering in Hot Competition**  
Tom Gilb, *Result Planning Ltd*  
**Location:** *Royal Dublin A*

**Tutorial H06**                    **Performance-Based Earned Value**  
Paul Solomon, *Northrop Grumman*  
**Location:** *Royal Dublin B*

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## 1300-1430

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**SESSION 8: Technical Paper Tracks & Working Group Presentations** -  
See page 55

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## 1400-1700

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**Robotics Demonstration** *sponsored by Harris Corporation* -  
*Exhibit Hall*

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## 1430-1500

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*Coffee Break in Exhibit Hall*

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## 1500-1630

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**SESSION 9: Technical Paper Tracks & Working Group Presentations** -  
See page 56

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## 1800-1930

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*Reception in Exhibit Hall*

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## 1930-2200

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**Banquet and Entertainment (Ticket Required)**

***Banquet Speaker:***

**Systems Engineering to Exploit Transformational Opportunities in Tomorrow's Markets**

William B. Rouse, *Georgia Institute of Technology*

***Entertainment:***

**Cirque Show**

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# Technical Paper Matrix

WEDNESDAY, 12 JULY 2006			
SESSION	ENABLER	APPLICATION SECTOR	PAPERS
7.1	Complex Systems	Special Session	3
7.2	Modeling & Tools	Aerospace & Defense	3
8.1	Systems Science	Infrastructure	1
		Emerging Technologies	1
		Multiple	1
8.2	S.E. Management Process	Transportation	1
		Aerospace & Defense	1
		Multiple	1
8.3	S.E. Support Process	Aerospace & Defense	3
9.1	Specialty Engineering	Multiple	1
		Emerging Technologies	2
9.2	Systems Science	Public Interest	3
9.3	S.E. Technical Process	Multiple	1
	S.E. Management Process	Multiple	1
		Enterprise	1

<b>Session Chair:</b>	<b>7.1 Complex Systems</b>	<b>7.2 Modeling &amp; Tools</b>	<b>7.3 Working Group Presentation</b>	<b>7.4 Working Group Presentation</b>	<b>7.5 PANEL</b>	<b>7.6 PANEL</b>
1000-1025	<b>S. Sheard</b> <b>Complex Systems</b> Yaneer Bar Yam, <i>New England Complex Systems Institute</i>	<b>M. Sampson</b> <b>7.2.1 The FAR Approach : Functional Analysis/Allocation and Requirements Flowdown Using Use Case Realizations</b> M. Eriksson, K. Borg, <i>BAE Systems Hägglunds AB</i> ; J. Börstler, <i>Umeå University</i> ✱✱	<b>D. Walden</b> <b>Systems Science</b> B. White	<b>G. Wang</b> <b>Transportation: Space Systems</b> J. Andary	<b>Moderator: J. Stein</b> <b>7.5.0 Myriad Multiplying Risk Management Standards: "Converging Toward Best Practice" or "A Confusing Maze of Docs to Trap Us?" - What's up INCOSE?</b> <b>Panelists:</b> R. Charrette, <i>ITABHI Corp.</i> M. Powell, <i>Stevens Institute and Futron Corp.</i> A. Dolan, <i>Virginia Polytechnic Institute, University of Toronto</i> R. Williams, <i>Carnegie Mellon University SEI</i> R. Kitterman, <i>Northrop Grumman</i> G. Roedler, <i>Lockheed Martin</i>	<b>Moderator: D. Schrage</b> <b>7.6.0 Graduate Education and Research Issues for Capability-Based "Systems of Systems" Engineering</b> <b>Panelists:</b> D. Mavris, <i>Georgia Institute of Technology</i> C. Weiss, <i>Pratt and Whitney</i> P. Bitgen, <i>Georgia Institute of Technology</i>
1030-1055	<b>A Regimen for Complex Systems Engineering</b> Brian White, <i>The MITRE Corporation</i>	<b>7.2.2 Performing Functional Analysis/Allocation and Requirements Flowdown Using Use Case Realizations: An Empirical Evaluation</b> M. Eriksson, K. Borg, <i>BAE Systems Hägglunds AB</i> ; J. Börstler, <i>Umeå University</i>	<b>Information Sciences</b> J. Hofmeister	<b>Transportation: AP233</b> D. Oliver		
1100-1125	<b>System Engineering in the 21<sup>st</sup> Century - Implications from Complexity Theory</b> Linda J. Vandergriff, <i>The Aerospace Corporation</i>	<b>7.2.3 Tying Requirements to Design Artifacts</b> H. C. Briggs, <i>California Institute of Technology</i> ; M. Sampson, <i>UGS</i>	<b>Architecture</b> C. Dickerson	<b>Transportation:</b> A. Jain		
1145-1245				<b>Intelligent Transportation &amp; Transit Systems</b> M. Krueger		

# Wednesday, 12 July 2006

National A

National B

National C

National D

# SESSION 8

# Notes

Session Chair:	8.1 Systems Science	8.2 SE Management Process	8.3 Support Process	8.4 Working Group Presentation
1300-1325	R. Gonzales 8.1.1 Application of Systems Engineering to Industrial Supply Chains C. Haskins, <i>NTNU</i>	A. Jain 8.2.1 Establishing a Verification and Validation Process in Automotive Development: Increasing Product Quality while Reducing Costs M. de la Cruz, A. Vollerthun, <i>3D Systems Engineering GmbH</i> ; J. Meisenzahl, <i>BMW Group</i>	J. Fisher 8.3.1 Quantitative Analysis: Clawing your Way to the Top of the Maturity Pinnacle P. J. Frenz, A. C. Gurvin, <i>General Dynamics AIS</i>	R. Hettwer Technical Requirements
1330-1355	H. Wang, D. Frey, <i>MIT</i> 8.1.2 A Study of Applying Game Theoretic Concepts on Distributed Engineering System Design	B. H. Wells, <i>Raytheon Integrated Defense Systems</i> 8.2.2 Applying System Engineering to Naval Shipbuilding	W. E. Neff, <i>Los Alamos National Laboratory</i> ; C. H. Dagli, <i>University of Missouri-Rolla</i> 8.3.2 Use of Technical Business Practices by Geographically Separated Teams to Facilitate Concurrent Engineering of Ultraquality Systems (LA-US-05-8500)	Technical Architecture
1400-1425	T. Wang, <i>Morgan Stanley</i> ; R. de Neufville, <i>Massachusetts Institute of Technology</i> ✨	J. R. Armstrong, <i>Systems and Software Consortium</i> 8.2.3 Giving the Integrator Role a Sporting Chance	G. Osvalds, <i>Wells Landers Inc.</i> 8.3.3 Use of Architecture for Engineering Systems; The Good, The Bad, and The Ugly	Technical V&V
1430-1455				Technical DOE Facilities

National A

National B

National C

National D

Session Chair:	9.1 Specialty Engineering	9.2 Systems Science	9.3 SE Technical Process	9.4 Working Group Presentation
1500-1525	<p><b>S. Sutton</b></p> <p>9.1.1 Trade Study Cost Analysis Model E. J. Casey, D. M. Davis, <i>Raytheon Missile Systems</i></p>	<p><b>E. Igenbergs</b></p> <p>9.2.1 A Merlin Perspective Shines Light on Tough Issues J. W. Carl, <i>Mosaic Renaissance Int'l</i></p>	<p><b>C. Dickerson</b></p> <p>9.3.1 Trade Studies with Uncertain Information D. G. Ullman, <i>Robust Decisions</i>; B. P. Spiegel, <i>Honeywell</i></p>	<p><b>R. Rood</b></p> <p>SysML S. Friedenthal</p>
1530-1555	<p>9.1.2 A Basic Primer in Life Cycle Cost Analysis F. Q. Redman, A. T. Crepen, <i>Raytheon missile Systems</i></p>	<p>9.2.2 A Framework for a National Undergraduate Systems Engineering Stream of Studies in Discipline-centric Degrees: Proposal Analysis T. L. Ferris, <i>University of South Australia</i>; Y. S. W. Peng, <i>Oversens Chinese Institute of Technology</i></p>	<p>9.3.2 Real Options and Value Driven Design in Spiral Development J. W. Dahlgren, <i>The MITRE Corporation</i> (SE Mgmt Process)</p>	<p><b>Net Centric Operations</b> J. Hsu</p>
1600-1625	<p>9.1.3 Screening for Real Options "In" an Engineering System: A Step Towards Flexible System Development PART 1: The Use of Coupled Design Matrices to Create an End-to-End Representation of a Complex Socio-Technical System J. E. Bartolomei, D. Hastings, R. de Neufville, D. H. Rhodes, <i>MIT</i></p>	<p>9.2.3 Architecting Synthetic Environments to Support the Systems Engineering of Capability D. J. Battersby, <i>BAE Systems (SEIC)</i></p>	<p>9.3.3 Defining, Finding, and Hiring REAL Systems Engineers E. P. Arnold, <i>BAE Systems L.P.</i> (SE Mgmt Process)</p>	<p><b>Intelligent Enterprises</b> N. Doug</p>

# Key Reserve Presentation Schedule

Location: *ChampionsGate (Lobby Level)*

## 1010-1025

**KR.01 Universal Electronic Health Record: Just what the doctor ordered**

R. Shahi, *CTIS, Inc*

## 1030-1045

**KR.02 The Architecture of Enterprise Architecture**

T. Blevins, *The MITRE Corporation*

## 1050-1105

**KR.03 Foundational Systems Engineering (SE) Patterns for a SE Pattern Language**

J. J. Simpson, M. J. Simpson, *System Concepts*

## 1110-1125

**KR.04 Preparing SEBoK for Korea Defense Systems Acquisition Processes**

M-D. Han, *Korea Third Military Academy*

## 1130-1145

**KR.05 Integrated Project Control Loop Concept -Surviving in the Jungle of Complex Projects with an Advanced Project Management Decision Basis**

T. Laudan, A. Mauritz, *EADS Germany GmbH*

## 1150-1205

**KR.06 Balancing Cost and Performance During Design**

D. M. Cronin, *Cognition Corporation*; K. Ash, *Raytheon Company*

## 1300-1315

**KR.07 A Prioritization Process**

R. Botta, *BAE Systems*; A.T. Bahill, *University of Arizona*

## 1320-1335

**KR.08 Development Program Risk Assessment based on Utility Theory**

J. Z. Ben-Asher, *Technion*

## 1340-1355

**KR.09 Improving the Structure and Content of the Requirement Statement**

W. R. Scott, J. Kasser, X-L. Tran, *University of South Australia*

## 1400-1415

**KR.10 Cost Models with Explicit Uncertainties for Electronic Architecture Trade-off And Risk Analysis**

J. Axelsson, *Volvo Car Corporation and Mälardalen University*

# *Key Reserve Presentation Schedule*

## **1420-1435**

- KR.11 Capturing Total System of Systems Costs Using SEER-H with Total System Vision (TSV) and SEER-SEM: An Example Application**

J. P. Falque, *Galorath Incorporated*

## **1440-1455**

- KR.12 Enterprise Analysis and Assessment**

J. J. Roberts, *The MITRE Corporation*

## **1500-1515**

- KR.13 Process for ABET Accreditation in a Systems Engineering Undergraduate Program**

P. S. Brouse, *George Mason University*

## **1520-1535**

- KR.14 Process in Enterprise Systems Engineering**

K. K. McCaughin, J. K. DeRosa, *The MITRE Corporation*

## **1540-1555**

- KR.15 Can Systems Modeling Language Impact Systems Engineering?**

K. E. Orr, *The Boeing Company*;

S. Ramakrishnan, C. Dagli, *University Missouri-Rolla*

## **1600-1615**

- KR.16 Heuristics and Genetic Algorithms**

M. D. Mobley, *The Boeing Company*;

C. H. Dagli, D. Enke, *University of Missouri-Rolla*