

Conference Program

Thursday 4/6

8:00-5:00

Systems Engineering and Architecting Network (SEA-NET)
Workshop for Doctoral Systems Engineering candidates
By Invitation at the University of Southern California

Thursday Evening 4/6

5:30-8:00

No-Host Reception for CSER and SEA-NET - SEA-NET Poster Presentations

Friday Morning 4/7

8:00-9:00

Registration and Continental Breakfast

9:00-10:30

Plenary Session I - Chair Dr. George Friedman, USC

Professor **George Friedman**, CSER'06 Conference Chair - **Greetings and CSER overview**

Professor **Yannis Yortsos**: Dean, Viterbi School of Engineering - **Welcome to the 100th anniversary of engineering at USC**

Professor **Stan Settles**, Director, Systems Architecting and Engineering, USC - **SAE and interdisciplinary research at USC**

Professor **Barry Boehm**, Center for Software Engineering at USC - **The merging of systems and software into a new center**

10:30-11:00

Morning Break

11:00-12:30

Plenary Session II - Chair Dr. George Friedman, USC

Professor **Andy Sage**, George Mason University, EIC Systems Engineering - **Intellectual challenges in systems engineering research**

Robert Rassa, Raytheon; President, IEEE Systems Council - **Research perspectives of the newly established IEEE Systems Council**

Leif De Wolf, Raytheon, Chairman, AIAA Systems Engineering Technical Committee - **AIAA roles in supporting systems engineering research**

"Thank you's" from **George Friedman, Scott Jackson and Eric Honour**

12:30-2:00

Lunch

Recognizing accepted papers that cannot be presented

A Test-bed for the Experimental Validation and Assessment of different Diagnostic Techniques, John Pearson, Mike Walsh, Tony Martin, Mandeep Khella (163) (unable to attend)

Improving Information System Availability By Managing Risk Of Compromise Through The Application Of Simulation Approaches, Robert A. Parkin (183) (unable to attend)

Friday Afternoon 4/7

2:00-3:30	1.1 Complex Systems Engineering	1.2 IT Systems Measurement	1.3 Methods and Concepts	1.4 Systems of Systems	1.5 Human Factors in SE
	1.1.1 Panel - Complex Systems Engineering Facilitator - Russ Abbott Paul Davis, Eric Honour, Michael North, Sarah Sheard, Rich Terrile, Bob Weber, Brian White	1.2.1 - Assessment Of IT Governance – A Prioritization of Cobit, Mårten Simonsson, Pontus Johnson (151)	1.3.1 - Towards Effective System Life Cycle Management – Research on the relationships between System Architecture, Organizational and Process Structures, Tom Strandberg (179)	1.4.1 - Synthesis of Existing Cost Models to Meet System of Systems Needs, Jo Ann Lane, Barry Boehm (128)	1.5.1 - Regret as an Element of Deterministic Tradeoff Studies, Edouard Kujawski (141)
		1.2.2 - Business Value Evaluation of IT Systems: Developing a Functional Reference Model, Magnus Gammelgård, Per Närman, Mathias Ekstedt, Lars Nordström (153)	1.3.2 - On the Use of Architectural Products for Cost Estimation, Ricardo Valerdi, Indrajeet Dixit (167)	1.4.2 - Developing Ontologies for Interoperability of Systems of Systems, John S. Osmundson, Thomas V. Huynh, Paul M. Shaw (131)	1.5.2 - Whole-Brain Thinking in Systems Architecting, Tony Di Carlo, Behrokh Khoshnevis (132)
	1.2.3 - A Theory-Based MetaModel for Strategic Business and IT Alignment, Leonel Plazaola, Enrique Silva Molina, Norman Vargas, Mathias Ekstedt, Johnny Flores (187)	1.3.3 - Interpreting the Spiral Model of Software-Intensive System Development – An ULCM Approach, Dr. Peter Hantos (120)	1.4.3 - High-level Communication in Systems-of-Systems, Hermann Kaindl, Jürgen Falb, Edin Arnautovic, Roman Popp (148)	1.5.3 - Systems Engineering Education, R.D Adcock (154)	

3:30-4:00	Afternoon Break				
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4:00-5:00	2.1 Real Options in SE	2.2 Architecting / System Design	2.3 Methods and Concepts	2.4 Systems of Systems	2.5 Human Factors in SE
	2.1.1 - Identification of Real Options “in” Projects, Tao Wang, Richard de Neufville (147)	2.2.1 - Verification of System Architectures Using Modal Logics and Formal Model Checking Techniques, Abbas K. Zaidi, Alexander H. Levis (185)	2.3.1 - Formal Systems Concepts, Joseph Simpson, Mary Simpson (106)	2.4.1 - Modeling Net-Centric System of Systems using the Systems Modeling Language (SysML), Madwaraj Rao, Sreeram Ramakrishnan, Cihan Dagli (162)	2.5.1 - The Science of Organizational Psychology Applied to Mission Assurance, Scott Jackson, Katherine Erlick,, Joann Gutierrez (102)
	2.1.2 - Screening for Real Options “In” an Engineering System: A Step Towards Flexible Weapon System Development, Jason E. Bartolomei, Daniel E. Hastings, Richard de Neufville, Donna H. Rhodes (181)	2.2.2 - On the Tensions Inherent in the Systems Engineering of Capability, Peter W Bolton (125)	2.3.2 - Advancing an Ontology for Systems Engineering to Allow Consistent Measurement, Eric C. Honour, Ricardo Valerdi (134)	2.4.2 - Managing Complexity with the Department of Defense Architecture Framework: Development of a Dynamic System Architecture Model, Matthew G. Richards, Daniel E. Hastings, Nirav B. Shah, Donna H. Rhodes (177)	2.5.2 - Excellence in Systems Engineering: What Characterizes Successful Systems Engineers?, Moti Frank (103)

Friday Evening 4/7

5:30-6:30	Reception				
6:30-9:00	Conference Banquet - hosted by Air Force Center for Systems Engineering and AFIT				
	Mark Wilson, Director Air Force CSE (ret) - New emphasis on systems engineering for the Air Force Dr. James Roche, Secretary of the Air Force (ret) - The impact of DoD's long term strategy on technology development				

Saturday Morning 4/8

8:00-9:00	Registration and Continental Breakfast				
9:00-10:00	3.1 Complexity Methods	3.2 Requirements Analysis	3.3 Modeling and Simulation	3.4 System Assessment	3.5 Tools and Techniques
	3.1.1 - Using Tensegrity to Study Emergent System Behavior, Michael S. McBeth (146)	3.2.1 - Engineering Agile Systems: Creative-Guidance Frameworks for Requirements and Design , Rick Dove (180)	3.3.1 - Low-Cost Distributed Computing Framework for Large Option Space Trade Studies, Ralph Ewig (150)	3.4.1 - Systems Engineering Approach to Research, Analyze, Model, and Simulate the Performance of Containerized Shipping and Its Interdependencies with the United States Critical Infrastructure, Jerrell Stracener, Stephen A. Szygenda, Susan Vandiver (171)	3.5.1 - Integrating Requirements Engineering And Cognitive Work Analysis: A Case Study, Neil A. Ernst, Greg A. Jamieson, John Mylopoulos (142)
	3.1.2 - Technical Interaction Density and Technological Innovation of Complex Systems, Pedzi Makumbe (172)	3.2.2 - A Proposed Research Programme for Determining a Metric for a Good Requirement, Joseph Kasser, William Scott, Xuan-Linh Tran, Sergey Nesterov (137)	3.3.2 - A Multi-Disciplinary And Model-Based Design Methodology For High-Tech Systems, W.P.M.H. Heemels, E. van de Waal, G.J. Muller (164)	3.4.2 - Postoptimality Analysis in the Selection of Technology Portfolios, Virgil Adumitroaie, Kacie Shelton, Alberto Elfes, Charles R. Weisbin (160)	3.5.2 - Be Ready, Be Proactive, and Improvise -- Systems Engineering, the Enterprise, and Risks , Joseph E. Justin (136)
10:00-10:30	Morning Break				
10:30-11:30	4.1 Complexity Methods	4.2 SE Patterns	4.3 Modeling and Simulation	4.4 System Assessment	4.5 Tools and Techniques
	4.1.1 - A Framework for Modeling the Operational Environment for Deriving System Requirements, Larry Earnest (135)	4.2.1 - Systems Engineering (SE) Patterns and Pattern Language, Joseph Simpson, Mary Simpson (105)	4.3.1 - Processes for Analyzing Model Uncertainty and Selection, Steve Whittle, Eshan Rajabally (166)	4.4.1 - A Model for Assessing the Performance of Interoperable, Complex Systems, Thomas V. Huynh, John S. Osmundson (127)	4.5.1 - Creating a Tool Independent Systems Engineering Environment, Jim Pederson (123)
	4.1.2 - A Methodology for Deriving System Requirements Using Agent Based System Modeling, Karthik Gopalakrishnan, Sreeram Ramakrishnan, Cihan H. Dagli (144)	4.2.2 - Application of Systems Engineering and Other Disciplines to the Design of a Sustainable Supply Chain, Cecilia Haskins (157)	4.3.2 - The Phenomena of Systems Engineering, Scott Workinger (110)	4.4.2 - From TRL to SRL: The Concept of Systems Readiness Levels, Brian Sauser, Dinesh Verma, Jose Ramirez-Marquez, Ryan Gove (126)	4.5.2 - Reducing Risk of New Business Startups Using Rapid Systems Engineering, Gary O. Langford (140)
11:30-1:00	Lunch				

Saturday Afternoon 4/8

	Plenary Session III - Chair Dinesh Verma, Stevens Tech
1:00-3:00	Professor George Korfiatis , Dean, Schaefer School of Engineering - Long range perspectives on SE research at Stevens Tech
	Dr Dinesh Verma , Professor of Systems Engineering, Stevens Tech - Growing research programs with industry and government
	Dr. Donna Rhodes , MIT, Director of Strategy for INCOSE - The future of SE research and SEA-NET
	Dr. Azad Madni , CEO of Intelligent Systems Technology, Inc - Frontiers of research in intelligent systems
	Samantha Brown , INCOSE Technical Director - Government-funded SE research in the UK
3:00-3:30	Afternoon Break
	Plenary Session IV - Chair Dinesh Verma, Stevens Tech
3:30-5:30	Industrial Panel - Industry's vision for the future of SE, and the role of SE education and research. Chairman: Dr. Elliot Axelband , Rand Corporation Panelists representing: Boeing, Lockheed Martin, Raytheon, Northrop Grumman, General Dynamics, RAND, SAIC, and the Aerospace Corporation.
	Official End of CSER 2006

Saturday Evening 4/8

	INCOSE Research Vision 2020 Workshop
6:00-7:00	Dr. Rashmi Jain , INCOSE Head of Research and Education, Introductions and Overview
7:00-8:00	No-Host Reception for INCOSE Vision 2020

Sunday 4/9

	INCOSE Research Vision 2020 Workshop
8:00-11:00	Breakout Sessions
	Group Presentations
11:30-1:00	Dr. Rashmi Jain , INCOSE Head of Research and Education, INCOSE Research Vision 2020 Wrap-Up