▸ CONFERENCE OVERVIEW

The NDIA Systems Engineering conference is focused on improving acquisition and performance of Defense programs and systems, including net-centric operations and data/information interoperability, system-of-systems engineering and all aspects of system sustainment. Convened in San Diego, CA, October 26-29, 2009, this conference is sponsored by the National Defense Industrial Association, Systems Engineering Division, with technical co-sponsorship by IEEE AES, IEEE Systems Council and the International Council on Systems Engineering, and is supported by the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics, Office of the Director, Defense Research & Engineering/Systems Engineering.

▸ BACKGROUND

The Department of Defense continues to work to improve the acquisition of military equipment and capability to assist the warfighter in protecting the U.S. and its allies, and help oppressed nations around the world, amidst continuously changing conditions and threats. The DoD seeks to improve the acquisition process and overall program execution of military systems, to provide greater, more effective and reliable warfighting capability, at affordable cost and within reasonable schedules. One of the primary and critically important areas of program acquisition and execution lies in the umbrella discipline of Systems Engineering, which is the overall integrating function in defense programs, from proper requirements definition & flowdown, effective and affordable design that integrates reliability, availability and maintainability considerations into the overall balance of design that emphasizes supportability and usage aspects along with overall performance, cost and schedule. Systems Engineering principles embody strong technical and risk management aspects, for both the acquiring program office as well as the executing defense prime and subcontractors. Strong emphasis on Systems Engineering throughout the life cycle of the program, from concept development through sustainment, is a key enabler of successful programs. The annual Systems Engineering Conference explores the role of Systems Engineering in defense programs from all aspects and perspectives, including the pragmatic, practical and academic viewpoints, and brings key practitioners together to work on effective solutions to achieving a successful warfighting force.

▸ CONFERENCE OBJECTIVES

This conference seeks to create an interactive forum for Program Managers, Systems Engineers, Chief Scientists and Engineers and Managers from the Requirements, Design, Verification, Support, Logistics and Test communities from Government, Academia, and Industry. The conference will provide the opportunity to shape policy and procedures by exchanging innovative tactics and lessons learned.

► **CONTACTS**

**Technical Program
Co-Chairs:**
Mr. Steve Henry,
Manager, Systems Engineering
and Program Support,
Northrop Grumman
Information Systems,
stephen.henry@ngc.com,
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Dr. Tom Christian,
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Conference Chair:
Mr. Bob Rassa,
Director, Systems
Supportability, Raytheon;
Chair, Systems Engineering
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Meeting Planner:
Ms. Suzanne Havelis,
NDIA, shavelis@ndia.org,
(703) 247-2570.

Conference Director:
Mr. Sam Campagna,
NDIA, scampagna@ndia.org,
(703) 247-2544

► **ATTIRE**
Appropriate dress for this conference is business casual for civilians and class B uniform for military. During conference registration and check-in, each participant will be issued an identification badge. Please be prepared to present a picture ID. Badges must be worn at all conference functions.

► **CONFERENCE PROCEEDINGS**
Proceedings will be available on the web through the Defense Technical Information Center (DTIC), and will be available one to two weeks after the conference. You will receive notification via e-mail once proceedings are posted and available on the web.

► **CONTINUING EDUCATION UNIT CREDIT**

NDIA is offering CEU credit options for the Systems Engineering Conference. For more information, please contact Ms. Suzanne Havelis at 703.247.2570 or shavelis@ndia.org.

► **2010 CALL FOR PAPERS INFORMATION**

The primary objective of the 13th Annual Systems Engineering Conference is to provide insight, information and lessons learned into how we can improve the overall performance of defense programs via a better, more focused application of systems engineering that will lead to more capable, interoperable and supportable weapon systems for the warfighter, with reduced total ownership costs, to help our military meet its current and new mission area and capabilities requirements. Technical and management presentations are a key tactic in achieving this objective. You are invited to submit a short (under 300 word) abstract of a presentation for a session (see topics on the website). Abstracts must fully describe the planned content and how the presentations will advance the objectives of the conference and session. All accepted presentations will be delivered at the conference in electronic format; full papers are optional and are not required.

Abstracts must include the following administrative information: presentation title, author's name, title, e-mail address, phone number, mailing address and organization and the conference session targeted. Abstracts must be submitted no later than Sunday, May 30, 2010 via the following web link:

http://application.ndia.org/abstracts/1870

Abstracts will only be accepted through this web link, and all required information must be completed. Upon completion of the required information, you will receive an e-mail confirmation.

**Conference presenters are not exempt from registration and conference fees.

CONFERENCE AGENDA

SUNDAY, OCTOBER 25, 2009

5:00 pm - 7:00 pm	**REGISTRATION FOR TUTORIALS AND GENERAL CONFERENCE**

MONDAY, OCTOBER 26, 2009

7:00 am - 6:00 pm	**REGISTRATION**
7:00 am - 8:00 am	**CONTINENTAL BREAKFAST (FOR TUTORIAL ATTENDEES ONLY)**
8:00 am - 12:00 pm	**TUTORIAL TRACKS**
9:45 am - 10:15 am	**MORNING BREAK (FOR TUTORIAL ATTENDEES ONLY)**
12:00 pm - 1:00 pm	**LUNCH (FOR TUTORIAL ATTENDEES ONLY)**
1:00 pm - 5:00 pm	**TUTORIAL TRACKS CONTINUED**
2:45 pm - 3:15 pm	**AFTERNOON BREAK (FOR TUTORIAL ATTENDEES ONLY)**
5:00 pm - 6:00 pm	**RECEPTION IN THE REGATTA PAVILION - OPEN TO ALL CONFERENCE ATTENDEES**

TUESDAY, OCTOBER 27, 2009

7:15 am - 7:00 pm **REGISTRATION**

7:15 am - 8:15 am **CONTINENTAL BREAKFAST IN THE REGATTA PAVILION**

8:15 am - 8:30 am **PLENARY SESSION 1 - INTRODUCTION & OPENING REMARKS**
- Mr. Sam Campagna, *Director, Operations, NDIA*
- Mr. Bob Rassa, *Director, Systems Supportability, Raytheon; Chair, Systems Engineering Division, NDIA*

8:30 am - 9:30 am **KEYNOTE**
- Honorable Zachary J. Lemnios, *Director, Defense Research and Engineering, Office of the Under Secretary of Defense (Acquisition, Technology and Logistics)*

9:30 am - 10:00 am **MORNING BREAK IN THE REGATTA PAVILION**

10:00 am - 12:00 pm **PLENARY SESSION 2 - ACQUISITION EXECUTIVES PANEL**
View from the Top: How Can SE Support Program Execution?
Moderator: Mr. Terry Jaggers, *Principal Deputy, Systems Engineering, Office of the Director, Defense Research and Engineering*
- Mr. David G. Ahern, *Director, Portfolio Systems Acquisition, Office of the Under Secretary of Defense (Acquisition, Technology and Logistics)*
- Mr. Thomas E. Mullins, *Deputy Assistant Secretary for Plans, Programs, and Resources (SAAL-ZR), Office of the Assistant Secretary of the Army (Acquisition, Logistics and Technology)*
- Mr. Christopher A. Miller, *PEO for Command, Control, Communications, Computers and Intelligence (C4I), U.S. Navy*
- Mr. Randall G. Walden, *Director, Information Dominance Programs, Office of the Assistant Secretary of the Air Force (Acquisition)*

12:00 pm - 1:30 pm **LUNCH WITH SPEAKER IN THE REGATTA PAVILION**
- Mr. Stephen Welby, *Director, Systems Engineering, Office of the Director, Defense Research and Engineering*

TUESDAY, OCTOBER 27, 2009 - CONTINUED

1:30 pm - 3:15 pm	**PLENARY SESSION 3 - TEST & EVALUATION EXECUTIVES PANEL** *View from the Top: How SE Can Support Test and Evaluation?* **Moderator:** Mr. Jim O'Bryon, *The O'Bryon Group; Chair, NDIA Test and Evaluation Division* ▸ Dr. James N. Streilein, *Technical Advisor, HQ Army Test & Evaluation Command* ▸ Ms. Amy Markowich, *Deputy DoN T&E Executive* ▸ Colonel Dexter M. Sapinoso, USAF, *Chief of Air Force Test and Evaluation Policy and Programs* ▸ Mr. Christopher DiPetto, *Acting Director, Developmental Test and Evaluation, Office of the Director, Defense Research and Engineering*
3:15 pm - 3:30 pm	**AFTERNOON BREAK IN THE REGATTA PAVILION**
3:30 pm - 5:15 pm	**PLENARY SESSION 4 - SE AND ACQUISITION REFORM: THE WAY AHEAD** **Moderator:** Mrs. Kristen Baldwin, *Systems Engineering Directorate, Office of the Director, Defense Research and Engineering* ▸ Mr. Ross Guckert, *Office of the Secretary of the Army for Acquisition, Logistics and Technology (ASA(ALT))* ▸ Mr. Carl Siel, *Office of the Assistant Secretary of the Navy for Research, Development and Acquisition (ASN(RDA)CHSENG)* ▸ Colonel Shawn Shanley, USAF, *Chief Systems Engineer, Office of the Assistant Secretary of the Air Force for Acquisition, Science, Technology, and Engineering (SAF/AQR)* ▸ Mr. Nicholas Torelli, *Systems Engineering Directorate, Office of the Director, Defense Research and Engineering*
5:30 pm - 7:00 pm	**RECEPTION IN THE REGATTA PAVILION**

WEDNESDAY, OCTOBER 28, 2009

7:00 am - 5:15 pm	**REGISTRATION**
7:00 am - 8:00 am	**CONTINENTAL BREAKFAST IN THE REGATTA PAVILION**
8:00 am - 12:00 pm	**CONCURRENT SESSIONS -** *Please refer to the following pages for session schedule*
9:45 am - 10:15 am	**MORNING BREAK IN THE REGATTA PAVILION**
12:00 pm - 1:30 pm	**AWARDS LUNCH IN THE REGATTA PAVILION**
1:30 pm - 5:15 pm	**CONCURRENT SESSIONS -** *Please refer to the following pages for session schedule*
3:15 pm - 3:30 pm	**AFTERNOON BREAK IN THE REGATTA PAVILION**
5:15 pm	**WEDNESDAY SESSION ADJOURNS**

THURSDAY, OCTOBER 29, 2009

7:00 am - 3:00 pm	**REGISTRATION**
7:00 am - 8:00 am	**CONTINENTAL BREAKFAST IN THE REGATTA PAVILION**
8:00 am - 12:00 pm	**CONCURRENT SESSIONS -** *Please refer to the following pages for session schedule*
9:45 am - 10:15 am	**MORNING BREAK IN THE REGATTA PAVILION**
12:00 pm - 1:00 pm	**LUNCH IN THE REGATTA PAVILION**
1:00 pm - 3:00 pm	**CONCURRENT SESSIONS -** *Please refer to the following pages for session schedule*
3:00 pm	**CONFERENCE ADJOURNS**

MONDAY, OCTOBER 26, TUTORIAL SESSIONS

TRACK	8:00 AM SESSION A	10:15 AM SESSION B	1:00 PM SESSION C	3:15 PM SESSION D
TRACK 8 Palm II	8819 - 1A8 - Tutorial: Rethinking Risk Management Ms. Audrey Dorofee, SEI/CMU	8819 - 1B8 - Tutorial: Rethinking Risk Management Ms. Audrey Dorofee, SEI/CMU	8877 - 1C8 - Tutorial: Best Practices in Modeling and Simulation Dr. Gene Paulo, Naval Postgraduate School	8877 - 1D8 - Tutorial: Best Practices in Modeling and Simulation Dr. Gene Paulo, Naval Postgraduate School
TRACK 7 Palm I	8785 - 1A7 - Tutorial: Agile Development in Defense Acquisition Dr. Peter Hantos, The Aerospace Corporation	8785 - 1B7 - Tutorial: Agile Development in Defense Acquisition Dr. Peter Hantos, The Aerospace Corporation	8801 - 1C7 - Tutorial: Integrating SE with Earned Value Management Mr. Paul Soloman, Performance-Based Earned Value	8801 - 1C7 - Tutorial: Integrating SE with Earned Value Management Mr. Paul Soloman, Performance-Based Earned Value
TRACK 6 Mission III	9078 - 1A6 - Tutorial: Organizational Implications of SoS Ms. Suzanne Garcia, SEI/CMU	9078 - 1B6 - Tutorial: Organizational Implications of SoS Ms. Suzanne Garcia, SEI/CMU	8782 - 1C6 - Tutorial: Technology Transition and the Defense Acquisition System Mr. William Decker, DAU	8782 - 1C6 - Tutorial: Technology Transition and the Defense Acquisition System Mr. William Decker, DAU
TRACK 5 Mission II	8984 - 1A5 - Tutorial: How to use Lean SE Processes to Save Time and Money Mr. Tim Olson, Lean Solutions Institute, Inc.	8984 - 1B5 - Tutorial: How to use Lean SE Processes to Save Time and Money Mr. Tim Olson, Lean Solutions Institute, Inc.	9072 - 1C5 - Tutorial: Leveraging the Defense Acq Program Support (DAPS) Methodology to Conduct Program Assessment Mr. Peter Nolte, Systems Engineering Directorate, ODDR&E	9072 - 1D5 - Tutorial: Leveraging the Defense Acq Program Support (DAPS) Methodology to Conduct Program Assessment Mr. Peter Nolte, Systems Engineering Directorate, ODDR&E
TRACK 4 Mission I	9035 - 1A4 - Tutorial: Collaborative Decision Making Dr. Tommer Ender, Georgia Tech Research Institute	9035 - 1B4 - Tutorial: Collaborative Decision Making Dr. Tommer Ender, Georgia Tech Research Institute	8931 - 1C4 - Tutorial: Role of Mentoring in Developing the Sys Eng Workforce Mr. Nicholas Torelli, Systems Engineering Directorate, ODDR&E	8931 - 1D4 - Tutorial: Role of Mentoring in Developing the Sys Eng Workforce Mr. Nicholas Torelli, Systems Engineering Directorate, ODDR&E
TRACK 3 Bayview I	8955 - 1A3 -Tutorial: Early Sys Thinking and Planning in WPN Sys Concept Phase Mr. Jeff Loren, SAF/AQR (Alion Science & Technology)	8955 - 1B3 -Tutorial: Early Sys Thinking and Planning in WPN Sys Concept Phase Mr. Jeff Loren, SAF/AQR (Alion Science & Technology)	9040 - 1C3 - Tutorial: Implementing the Materiel Availability KPP in DoD Acquisition Programs Mr. Grant Schmieder, Systems Engineering Directorate, ODDR&E	9040 - 1D3 - Tutorial: Implementing the Materiel Availability KPP in DoD Acquisition Programs Mr. Grant Schmieder, Systems Engineering Directorate, ODDR&E
TRACK 2 Bayview II	8779 - 1A2 - Tutorial: Mission Based Test and Eval Strategy: Case Study Mr. Christopher Wilcox, U.S. Army Test and Evaluation Command	8779 - 1B2 - Tutorial: Mission Based Test and Eval Strategy: Case Study Mr. Christopher Wilcox, U.S. Army Test and Evaluation Command	8818 - 1C2 - Tutorial: Integrated Testing Enhances SE Dr. Beth Wilson, Raytheon Company	8818 - 1D2 - Tutorial: Integrated Testing Enhances SE Dr. Beth Wilson, Raytheon Company
TRACK 1 Bayview III	8736 -1A1 - Tutorial: Framework of Engineering Architectures Mr. Donald Firesmith, SEI	8736 - 1B1 - Tutorial: Framework of Engineering Architectures Mr. Donald Firesmith, SEI	8992 -1C1 -Tutorial: SoS Quality Attribute Specification and Architecture Evaluation Mr. Michael Gagliardi, SEI	8992 -1D1 -Tutorial: SoS Quality Attribute Specification and Architecture Evaluation Mr. Michael Gagliardi, SEI

WEDNESDAY, OCTOBER 28, CONCURRENT SESSIONS

TRACK	SESSION CHAIR	8:00 AM	8:35 AM	9:10 AM	10:15 AM	10:50 AM	11:25 AM
TRACK 8 Net-Centric Operations/ Interoperability Palm II	Mr. Jack Zavin, ASD (NII)	8780 - Net-Centric Best Practices Mr. Hiekeun Ko, JPEO-CBD - Software Support Activity	8788 - Data sharing in a Stability Operations Community of Interest: Utilizing a pilot program to prove concepts and develop trust. Mr. Gerald Christman, Femme Comp Inc.	8853 - C4I Architecture for Joint ASW Mr. Gregory Miller, Naval Postgraduate School	8929 - Extending Net-Centric Quality of Service to Systems of Systems Maj Vinod Naga, USAF, Air Force Institute of Technology	9081 - Testing in Service-oriented Environments Mr. Soumya Simanta, SEI	8913 - Linking Interoperability and Measures of Effectiveness: A Method for Evaluating Architectures Dr. David Jacques, Air Force Institute of Technology
TRACK 7 Program Management Palm I	Mr. Hal Wilson, Northrop Grumman Corporation and Ms. Dona Lee, Systems Engineering Directorate, ODDR&E	9003 - CMMI® for Executives	9034 - Sustainment and Continued Institutionalization of Best Practices and CMMI® at SPAWAR Mr. Michael Kutch, SPAWAR Systems Center Atlantic	9065 - Rapidly Implementing Lean CMMI® Processes That Meet Business Needs Mr. Tim Olson, Lean Solutions Institute, Inc	8982 - Systemic Root Cause Analysis – Driving Improvements into the Acquisition Process Mr. Peter Nolte, Systems Engineering Directorate, ODDR&EE	8791 - Cost and Risk Impacts of the New DOD 5000 Defense Acquisition Framework Dr. Peter Hantos, The Aerospace Corporation	8895 - A Comprehensive Review of Maturity Assessment Approaches for Improved Defense Acquisition Ms. Nazanin Azizian, The George Washington University
TRACK 6 System of Systems Mission III	Dr. Judith Dahman, Systems Engineering Directorate, ODDR&E/ MITRE and Mr. John Palmer, Boeing	NDIA SoS Committee Report Dr. Judith Dahman, Systems Engineering Directorate, ODDR&E/ MITRE	8960 - A Distillation of Lessons Learned from Complex System of Systems Acquisitions Dr. Richard Turner, Stevens Institute	8784 - Establishing a Departmental-Level Systems-of-Systems Engineering Management Construct for the Department of the Navy, Progress Report Mr. John Kevin Smith, Asst Sec of the Navy for RD&A, Chief Engineer	8840 - Naval Systems of Systems Engineering Guidebook Update Ms. Melinda Reed, DoD (ASN RDA CHSENG)	8942 - DoD Systems of Systems Update Dr. Judith Dahmann, Systems Engineering Directorate, ODDR&E/ MITRE	8961 - Engineering Systems of Systems: An Integration Perspective Dr. Emmett Maddry, NSWCDD
TRACK 5 Human Systems Integration / System Safety - ESOH Mission II	Mr. Stuart Booth, Systems Engineering Directorate, ODDR&E / Mr. Sherman Forbes, U.S. Air Force	8975 - What is Human Systems Integration (HSI) and why should we do it? Mr. Stuart Booth, Systems Engineering Directorate, ODDR&E	9042 - Bounding the Human Within the System Mr. Michael Mueller, U.S. Air Force Center for Systems Engineering	8829 - The Army Health Hazard Assessment Program's Medical Cost Avoidance Model Dr. Timothy A. Kluchinsky, Department of Army	9070 - Improving Safety Technology Insertion in DoD Acquisition Programs Dr. Elizabeth Rodriguez-Johnson, Systems Engineering Directorate, ODDR&E	9094 - DoD Green Procurement Program Update and Path Forward Mr. David Asiello, Office of the Secretary of Defense	9091 - Environment, Safety, and Occupational Health (ESOH) Risk and Technology Requirements Reporting at Acquisition Program Reviews Ms. Lucy Rodriguez, Booz Allen Hamilton

TRACK 4 — Test and Evaluation — Mission I
Chair: Dr. Beth Wilson, Raytheon Company

- 8848 - Integrated Testing: We Can Do It / Dr. Beth Wilson, Raytheon Company
- 8882 - Test & Evaluation Strategy for the Technology Development Phase / Ms. Darlene Mosser-Kerner, OUSD(AT&L)/ DDR&E/DT&E
- 8883 - Test & Evaluation Products for the Systems Engineering Reviews / Mr. Woody Eischens, OUSD(AT&L)/ DDR&E/DT&E
- 8901 - Review Results of the NDIA/OSD Software Test Summit/ Workshop / Mr. Thomas Wissink, Lockheed Martin IS&GS
- 8814 - Joint Mission Environment Test Capability (JMETC), Lowering technical Risk by Improving Distributed Test Capabilities / Mr. Chip Ferguson, JMETC

TRACK 3 — Technology Maturity — Bayview I
Chair: Mr. Bill Nolte, WPAFB and Mr. James Malas, U.S. Air Force Research Laboratory

- 8916 - System Readiness - Assessing Technical Risk Throughout the Lifecycle / Mr. James Thompson, Systems Engineering Directorate, ODDR&E
- 8963 - Air Force Concept Maturity Assessment / Mr. George Freeman, U.S. Air Force, Center for Systems Engineering
- 8900 - DOD's Weapon System Portfolio: Are Results Getting Any Better? / Mr. Michael Sullivan, U.S. Government Accountability Office
- 8833 - Communicating Risk: Air Force RI3 Methodology / Mr. John Cargill, AF Cost Analysis Agency
- 8894 - Air Force Initiative – High Confidence Technology Transition Planning Through the Use of Stage-Gates – Update / Mr. Randy Bullard, U.S. Air Force Materiel Command
- 8891 - A comprehensive overview of techniques for measuring system readiness / Mr. James Bilbro, JB Consulting International

TRACK 2 — Early System Engineering — Bayview II
Chair: Mr. John Lohse, Raytheon Company and Mr. Jeff Loren, SAF/AQR (Alion Science & Technology)

- Panel Topic: 8924, 8925, 8933 - Early Systems Engineering in DoDI 5000.02 / Dr. Judith Dahmann, Ms. Lisa Reuss, Systems Engineering Directorate, ODDR&E
- Q&A: 8924, 8925, 8933 - Early Systems Engineering in DoDI 5000.02 / Dr. Judith Dahmann, Ms. Lisa Reuss, Systems Engineering Directorate, ODDR&E
- 8813 - Emerging Roles for Systems Engineering in Defense Decision Making; Better Aligning Requirements and Acquisition with the Budget and Security Environments / Mr. Vincent Roske, Institute for Defense Analyses
- 8949 - Updated DoD 5000 and CJCS 3170 Policies: A Requirements to Acquisition Gap Analysis / Mr. John Lohse, Raytheon Company
- 9026 - Early SE Determination of Best-Fit System Life Cycle Processes / Dr. Barry Boehm, USC

TRACK 1 — Systems Engineering Effectiveness — Bayview III
Chair: Mr. Al Brown, The Boeing Company

- 8816 - Mind the GAPs-a Systems Engineering Implementation of DoDI 5000.02 / Dr. Thomas Christian, U.S. Air Force
- 8990 - Systems Engineering for Rapid Capability Development / Mr. Thomas McDermott, Georgia Tech Research Institute
- 8974 - Transforming Systems and Software Engineering Across an Enterprise / Mr. Jeffery Wilcox, Lockheed Martin Corporation
- 8823 - Win and Influence Design Engineers---Change Their Affordability DNA / Mr. Frank Salvatore, High Performance Technologies, Inc.
- 8863 - Using Requirements Compliance to Identify Gaps Between the Technical Solution and Requirements / Mr. Frank Salvatore, High Performance Technologies, Inc.
- 8839 - Navy Systems Engineering Technical Review Process / Ms. Melinda Reed, DoD (ASN RDA CHSENG)

WEDNESDAY, OCTOBER 28, CONCURRENT SESSIONS

TRACK	SESSION CHAIR	1:30 PM	2:05 PM	2:40 PM	SESSION CHAIR	3:30 PM	4:05 PM	4:40 PM
TRACK 8 Palm II Net-Centric Operations/Interoperability *(left)* / Speciality Engineering *(right)*	Mr. Jack Zavin, ASD (NII)	8874 - The Boeing System of Systems Engineering (SoSE) Process and Its Use in Developing Legacy-Based Net-Centric Systems of Systems Mr. John Palmer, The Boeing Company	9010 - Network Enabled Weapons, A System Engineering Approach to Achieve Interoperablity Mr. Andrew Lieux, Naval Air Warfare Center Weapons Division	8854 - Human Interoperability Enterprise and Net Centric Operations Mr. Jack Zavin, ASD (NII)	Mr. Joel Mooralch, Raytheon Company	8944 - DoD's Refocus on Specialty Engineering (Reliability, Availability and Maintainability; Producibility and Quality, Supportability, Safety and Human Systems Integration) Mr. Chester Bracuto, Systems Engineering Directorate, ODDR&E	9043 - Implementing the Materiel Availability KPP in DoD acquisition programs—balancing life-cycle costs with warfighter needs Mr. Grant Schmieder, Systems Engineering Directorate, ODDR&E	8873 - IUID enables streamlined acquisition and system engineering Mr. Robert Leibrandt, DoD UID Policy Office 8958 - Security Systems Engineering Mrs. Kristen Baldwin, Systems Engineering Directorate, ODDR&E
TRACK 7 Palm I Program Management	Dr. Judith Dahmann, Systems Engineering Directorate, ODDR&E/MITRE and Mr. Hal Wilson, Northrop Grumman Corporation and Ms. Dona Lee, Systems Engineering Directorate, ODDR&E	8979 - Boots on the Ground: Tactical Planning at Program Start Up Mr. Gerry Becker, Harris Corporation	8999 - Acquisition Program Technical Measurement Mr. James Thompson, Systems Engineering Directorate, ODDR&E	9103 - The Economics of CMMI Mr. Geoff Draper, Harris Corporation	Dr. Judith Dahmann, Systems Engineering Directorate, ODDR&E/MITRE and Mr. Hal Wilson, Northrop Grumman Corporation and Ms. Dona Lee, Systems Engineering Directorate, ODDR&E	8995 - Integrated Systems Engineering and Developmental Test and Evaluation Mr. Chris DiPetro, OUSD(AT&L)/DDR&E/DT&E	9021 - Critical Success Factors for Milestone Review Risk Identification Dr. Barry Boehm, USC	9030 - Lessons Learned in Motivating Software Engineering Process Group to Focus on Achieving Business Goals and Not on Just Achieving a Maturity Level Mr. Girish Seshagiri, Advanced Information Services Inc.
TRACK 6 Mission III System of Systems	John Palmer, Boeing	8898 - Designing Collaborative Systems of Systems in support of Multi-sided Markets Mr. Philip Boxer, SEI	8892 - SysML Strategies to Characterize and Analyze Systems of Systems Dr. Jo Ann Lane, University of Southern California	9041 - On Modeling and Simulation Methods for Capturing Emergent Behaviors for Systems of Systems Dr. Jack Zentner, Georgia Tech Research Institute	John Palmer, Boeing	9060 - M&S Support for SoS SE Dr.Joann Lane, USC	8776 - The Modular SOS Paradigm: an Availability Paradox? Mr. Peter Gentile, Northrop Grumman Corporation	8866 - Extending FMECA to Systems of Systems Mr. Leopoldo Mayoral, Johns Hopkins University/APL
TRACK 5 Mission II Human Systems Integration *(left)* / System Safety - ESOH *(right)*	Mr. Stuart Booth, Systems Engineering Directorate, ODDR&E	8998 - Human Systems Integration – Ensuring the Human is Considered "Left of A" Col Larry Kimm, USAF, U.S Air Force	8885 - Human Systems Integration (HSI) - Integrating Human Concerns into Life Cycle Systems Engineering Ms. Cynthia Shewell, Booz Allen Hamilton	9012 - Human Systems Integration: Defining and Validating a Framework for Enhanced Systems Development Dr. Matthew Risser, Pacific Science & Engineering Group	Mr. Sherman Forbes, U.S. Air Force	9095 - Acquisition ESOH Risk Management and HAZMAT Management Part 1: Hazardouse Materials Management Plan Ms. Lucy Rodriguez, Booz Allen Hamilton	8890 - Building Safer UGVs with Run-time Safety Invariants Mr. Michael Wagner, Carnegie Mellon University, NREC	882D - Overview of Draft MIL-STD-882D With Change 1 Mr. Bob Smith, Booz Allen Hamilton

Top Half

TRACK / Session / Chair	Session A	Session B	Session C
TRACK 4 — Practical Systems Engineering, Mission I — *Mr. Dana Peterson, DRS Technologies, Inc.*	9014 - SAVI: Aerospace Platform Development and Certification Using Modeling and Simulation to "Integrate, then Build" — Mr. Gregory Pollari, Rockwell Collins	8855 - Certify and Fly Right: Preparing for DO-297 Certification — Mr. Keith Custer, Esterline Control Systems-AVISTA	8973 - C-17 Transition to Criteria-based Airworthiness Certification — Mr. Christian Stillings, USAF 516 AESG
TRACK 3 — Technology Maturity, Bayview I — *Mr. Bill Nolte, WPAFB and Mr. James Malas, U.S. Air Force Research Laboratory*	8798 - The New Technology Readiness Assessment Process — Dr. Jay Mandelbaum, Institute for Defense Analyses	8870 - S&T Portfolio Maturity & Performance Analysis: The Concept of Critical Research Elements — Mr. Has Patel, Infologic, Inc.	8879 - TRL Vectors in IPPD-based Portfolio Management — Mr. Michael Bartmess, General Dynamics/AIS
TRACK 2 — Early System Engineering, Bayview II — *Mr. John Lohse, Raytheon Company and Mr. Jeff Loren, SAF/AQR (Alion Science & Technology)*	9082 - Including Environment, Safety, and Occupational Health (ESOH) Requirements in Joint Capabilities Integration and Development System (JCIDS) Documents — Mr. Sherman Forbes, U.S. Air Force	8835 - T&E Collaboration and Contributions during Early Program Acquisition — Mr. Stephen Scukanec, Northrop Grumman Corporation Aerospace Systems	8795 - Mission-based Test and Evaluation Strategy: Creating Linkages between Technology Development and Mission Capability — Mr. John Beilfuss, U.S. Army Research Laboratory
TRACK 1 — Systems Engineering Effectiveness, Bayview III — *Mr. Al Brown, The Boeing Company*	8902 - Systems Engineering Leading Indicators: Insight into Effective Systems Engineering — Mr. Gary Roedler, Lockheed Martin Corporation	9414 - Correcting Deficiencies in the Systems Engineering of Tactical Weapons — Mr. Marvin Ebbert, Raytheon Missile Systems	8948 - Value Engineering Applications in Service Contracts — Dr. Jay Mandelbaum, Value Engineering Applications in Service Contracts

Bottom Half

TRACK / Session / Chair	Session A	Session B	Session C
TRACK 4 — Test and Evaluation of SoS, Mission I — *Dr. Beth Wilson, Raytheon Company*	8825 - Test and Evaluation in a System of Systems Environment — Mr. Edwin McDermott, 653 ELSW, Electronic Systems Center	8849 - Joint Integration and Interoperability Lab (JSIIL) — Mr. Steven Whitehead, SL, J8 Technical Director, USJFCOM	8935 - Systems of Systems Engineering and Test and Evaluation — Dr. Judith Dahmann, Systems Engineering Directorate, ODDR&E/MITRE
TRACK 3 — Technology Maturity, Bayview I — *Mr. Bill Nolte, WPAFB and Mr. James Malas, U.S. Air Force Research Laboratory*	8991 - Systems Engineering for the Science & Technology Community — Mr. Russell Menko, U.S. Army RDECOM/TARDEC	9017 - Linking Systems Engineering Artifacts with Complex Systems Maturity Assessments — Dr. Brian Sauser, Stevens Institute of Technology	8770 - Incorporating Maturity Assessment into House of Quality for Improved Decision Support Analysis and Risk Management — Mr. Pavel Fomin, U.S. Air Force
TRACK 2 — Early System Engineering, Bayview II — *Mr. John Lohse, Raytheon Company and Mr. Jeff Loren, SAF/AQR (Alion Science & Technology)*	8951 - USAF View of NRC "Pre-A Systems Engineering" Study Committee Recommendations As Addressed By Levin-McCain (P.L. 111-23; "Weapon Systems Acquisition Reform Act of 2009") — Mr. Jeff Loren, SAF/AQR (Alion Science & Technology)	8846 - Air Force Materiel Command Early Systems Engineering — Dr. Brian Kowal, USAF	9016 - A Framework for Enhancing Forward-looking Capability Delivery Metrics — Mr. Leonard Sadauskas, DoD CIO CT&S
TRACK 1 — Systems Engineering Effectiveness, Bayview III — *Mr. Al Brown, The Boeing Company*	8851 - Rapid Development and Integration of Remote Weapon Systems to Meet Operational Requirements — Mr. Joseph Burkart, NSWC Crane, Small Arms Air Platform Integration	8893 - Rapid Development — Mr. Michael Gaydar, NAVAIR	8847 - Tailoring the SE Process to Effectively Complement the SW Agile Development Process — Mr. William Lyders, ASSETT Inc.

THURSDAY, OCTOBER 29, CONCURRENT SESSIONS

TRACK	SESSION CHAIR	8:00 AM	8:35 AM	9:10 AM	SESSION CHAIR	10:15 AM	10:50 AM	11:25 AM
TRACK 8 **Software Intensive Systems** **Palm II**	*Mr. Paul Croll, CSC and Mr. Scott Lucero, Systems Engineering Directorate, ODDR&E*	8977 - Overview of DoD Software Engineering Initiatives Mr. Scott Lucero, Systems Engineering Directorate, ODDR&E	8820 - Graduate Software Engineering Reference Curriculum (GSwERC) Ms. Nicole Hutchison, Analytic Services, Inc.	8739 - Quality Assessment of Software-Intensive System Architectures and their Requirements (QUASAR) Mr. Donald Firesmith, SEI	*Mr. Paul Croll, CSC and Mr. Scott Lucero, Systems Engineering Directorate, ODDR&E*	8812 - A Systems Engineering Approach to Multi-Level Security in a Service Oriented Architecture Mr. Timothy Greer, Lockheed Martin Corporation	9104 - Static Code Analysis: Best Practices for Software Assurance in the Acquisition Life Cycle Mr. Paul Croll, CSC	8996 - Engineering Improvement in Software Assurance: A Landscape Framework Ms. Lisa Brownsword, SEI
TRACK 7 **Work Force Development** **Palm I**	*Dr. Don Gelosh, Systems Engineering Directorate, ODDR&E and Mr. Mike Ucchino, U.S. Air Force Center for Systems Engineering*	8926 - Systems Engineering Workforce Development Update Dr. Don Gelosh, Systems Engineering Directorate, ODDR&E	9076 - Assessing Systems Engineering Personnel Competency: Framework and Tool Experience Dr. Barry Boehm, University of Southern California	8943 - Team SE Skill Set Mr. Charles Garland, U.S. Air Force Center for Systems Engineering	*Dr. Don Gelosh, Systems Engineering Directorate, ODDR&E and Mr. Mike Ucchino, U.S. Air Force Center for Systems Engineering*	8966 - Improving Systems Engineering Curriculum Using a Competency-Based Assessment Approach Ms. Alice Squires, Stevens Institute of Technology	9088 - Enhancing Systems Engineering Competencies in the Enterprise Mr. Gary Roedler, Lockheed Martin Corporation	8789 - Achieving Acquisition Excellence via Improving the Systems-Engineering Workforce Dr. Kenneth Nidiffer, SEI
TRACK 6 **System of Systems** **Mission III**	*Dr. Judith Dahman, Systems Engineering Directorate, ODDR&E/MITRE and Mr. John Palmer, Boeing*	9083 - Requirements Engineering for Systems of Systems Mr. Soumya Simanta, SEI	8964 - Software Assurance in a System of Systems World: Interoperability Challenges - Reports from the Field Dr. Carol Sledge, SEI	8969 - An Introduction to Influence Maps: Foundations, Construction, and Use Mr. James Smith, SEI	*Dr. Judith Dahman, Systems Engineering Directorate, ODDR&E/MITRE and Mr. John Palmer, Boeing*	9024 - Dynamic Modeling of Programmatic and Systematic Dr. Brian Sauser, Purdue University	8903 - Global Earth Observation System of Systems (GEOSS) Mr. Lawrence McGovern, Northrop Grumman Electronic Systems	8915 - System of Systems Challenges and Solutions: Case Study Insights Mr. John Colombi, U.S. Air Force Institute of Technology
TRACK 5 **Human Systems Integration** **Mission II** *(AM)* **Systems Engineering Development Environment** **Mission II** *(later)*	*Mr. Stuart Booth, Systems Engineering Directorate, ODDR&E*	8937 - Integrating the Human into the system, integrating HSI Tools into Systems Engineering Dr. Jennifer Narkevicius, Jenius LLC	9064 - Economics of Human Systems Integration: Early Life Cycle Cost Estimation Using HSI Requirements 2ndLt Kevin Liu, USMC, MIT	Process management and tool selection to minimize risk of hand-arm vibration syndrome Mr. Sherman Forbes, U.S. Air Force	*Mr. Al Brown, The Boeing Company*	8945 - Standards Based Development Environment Mr. Christopher Oster, Lockheed Martin Corporation	8922 - The Role of DoD in Systems Engineering Standards and Models Mr. Donald Gantzer, Systems Engineering Directorate, ODDR&E	8844 - "The Power of the Spec: Understanding the Many Diverse Roles in SE of Good Specifications & Standards." Mr. Robert Kuhnen, U.S. Air Force

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	TRACK 4 — Practical Systems Engineering — Mission I	TRACK 3 — Modeling & Simulation — Bayview I	TRACK 2 — Logistics Systems — Bayview II	TRACK 1 — Architecture — Bayview III
Moderator	Mr. Dana Peterson, DRS Technologies, Inc.	Mr. Jim Coolahan, JHU/APL	Mr. Joel Moorvitch, Raytheon Company and Mr. Anthony Stampone, OSD-ATL	Mr. Joe Kuncel, Northrop Grumman Corporation
	9054 - A-10 Avionics System Architecture Trade Study and Analysis (AVSATA) Program — Mr. Richard Sorensen, KIHO Military Acquisition Consulting, Inc.	8947 - Report on a Study on Management Concepts for Broadly-Needed Modeling and Simulation Tools in the U.S. Department of Defense — Dr. James Coolahan, Johns Hopkins University/APL	9008 - Upgrade Fluid System Filter Element Monitoring To Increase Operational Reliability and Support Condition Based Maintenance Capability — Mr. Gary Rosenberg, Constellation Technology Corporation	8824 - Delivering DoDAF Version 2.0 to Architects and Systems engineers for IT Systems and Services — Mr. Walt Okon, Department of Defense CIO, Enterprise Architecture
	8946 - Protecting the Mission, Preserving Legacy and Promoting Growth — Ms. Patti Scaramuzzo, Lockheed Martin Corporation	9052 - Best Practices in Contracting for Models, Simulations, and Associated Data — Mr. Dennis Shea, CNA	9039 - Applying Systems Engineering to Fielded Weapon Systems and End-Items — Mr. Michael Ucchino, AF Center for Systems Engineering	8830 - Systems Engineering Needs of the DoDAF – Report of the Architecture Frameworks Working Group — Mr. Joe Kuncel, Northrop Grumman Corporation
	8880 - Naval Postgraduate School Advanced Seabase Enabler Project: A Systems Engineering Case Study — Mr. Lance Flitter, NSWC, Carderock Division	8759 - A Systems Engineering Framework for Integrating M&S Development Best Practices — Dr. Katherine Morse, Johns Hopkins University/APL	8988 - How to Save Time and Money Using Lean Maintenance Processes — Mr. Tim Olson, Lean Solutions Institute, Inc.	8831 - Human-Centered Design in Systems Engineering: Human View Methodology — Dr. Robert Smillie, SPAWAR

Bottom Session

	TRACK 4 — Practical Systems Engineering — Mission I	TRACK 3 — Modeling & Simulation — Bayview I	TRACK 2 — Logistics Systems — Bayview II	TRACK 1 — Systems Engineering Effectiveness — Bayview III
Moderator	Mr. Dana Peterson, DRS Technologies, Inc.	Mr. Jim Coolahan, JHU/APL	Mr. Joel Moorvitch, Raytheon Company and Mr. Anthony Stampone, OSD-ATL	Mr. Al Brown, The Boeing Company
	9007 - Technology Maturation for the Automated Aerial Refueling (AAR) Project — Ms. Carol Ventresca, SynGenics Corporation	9048 - Revisions to the Acquisition Modeling & Simulation Master Plan — Mr. Stephen Swenson, Systems Engineering Directorate, ODDR&E	8908 - Successful First AESA Deployment through Application of System Engineering — Mr. Scott Nichols, Raytheon Company	9097 - Acquisition ESOH Risk Management-How to Make It Work — Mr. Bob Smith, Booz Allen Hamilton
	8980 - Using Model-driven Engineering Techniques for Integrated Flight Simulation Development — Mr. Douglas Fiehler, Raytheon Missile Systems	8950 - Live, Virtual, Constructive Architecture Roadmap: The Quest for Interoperability, Standards, and Reuse — Dr. Gary Allen, Joint Training Integration & Evaluation Center	9031 - Supportability Lessons Learned with Line Replaceable Modules — Ms. Heiry Hsiung, Raytheon Company	8920 - A Methodology for Assessing Systems Engineering Practices — Ms. Lauren Levy, Johns Hopkins University/APL
	8875 - Tomahawk Weapon System Development and Integration — Mr. Gustavo Rivera, Naval Surface Warfare Center, Dahlgren Division	8939 - Understanding the New DoD Instruction 5000.61: "DoD Modeling & Simulation Verification, Validation and Accreditation (VV&A)" — Mr. Michael Truelove, Systems Engineering Directorate, ODDR&E	9063 - An Integrated RAM Approach to System Design and Support — Mr. Robert Finlayson, Johns Hopkins University/APL	8887 - Achieving a Systems Engineering Culture in a Science and Technology Laboratory Environment — Mr. Robert Rapson, Materials and Manufacturing Directorate, AFRL

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TRACK	SESSION CHAIR	1:00 PM	1:35 PM	2:10 PM
TRACK 8 Software Intensive Systems Palm II	Mr. Paul Croll, CSC and Mr. Scott Lucero, *Systems Engineering Directorate, ODDR&E*	8802 - Open Source Technology for Enterprise Health Management Mr. Edward Beck, CSC	8901 - Review Results of the NDIA/OSD Software Test Summit/Workshop Mr. Thomas Wissink, Lockheed Martin IS&GS	9506 - Software Acquisition Management Practical Experience Mr. James Jones, SSAI 0000 - Implementing CMMI on a COTS Modification Effort Mr. Dave Castellano, U.S. Army
TRACK 7 Work Force Development Palm I	Dr. Don Gelosh, *Systems Engineering Directorate, ODDR&E* and Mr. Mike Uchino, *U.S. Air Force Center for Systems Engineering*	8956 - Systems Engineering Approach to Workforce Development Mr. James Miller, U.S. Air Force	9046 - Developing an Introductory Systems Engineering Practitioners Course: "Model-Based Systems Engineering (MBSE) With SysML" Mr. Joseph Wolfrom, Johns Hopkins University/APL	8878 - Advanced Simulation Course for Army Simulation Management Professionals Dr. Gene Paulo, Naval Postgraduate School
TRACK 6 Enterprise Health Management Mission III	Mr. Howard Savage, *Savage Consulting* and Mr. Chris Reisig, *The Boeing Company*	8815 - Applying Systems Engineering to Operational System Improvements Ms. Ryanne Gentry, Acquisition Logistics Engineering	8842 - Applications in Integrated Diagnostics Mr. Jimmy Simmons, Georgia Tech Research Institute	8884 - Tactical Wheeled Vehicle Integrated Diagnostics Mr Lawrence Osentoski, DRIVE Developments, Inc.
TRACK 5 Systems Engineering Development Environment Mission II	Mr. Al Brown, *The Boeing Company*	8967 - Generating Visual and Interactive Output from System Engineering Tools Mr. John Schatz, Systems and Proposal Engineering Company	9015 - Challenges and Benefits of applying ISO STEP Mr. Stuart Booth, Systems Engineering Directorate, ODDR&E	9059 - Smallsat Conceptual Design Trade and Cost Modeling Tool Dr. Deganit Armon, Advatech Pacific, Inc
TRACK 4 Practical Systems Engineering Mission I	Mr. Dana Peterson, *DRS Technologies, Inc.*	8976 - A Systems Engineering Model for Roadmap Alignment Mr. Si Dok, U. S. Army TARDEC	9080 - Rapid Systems Engineering of the MRAP Gunner Restraint System Saves Lives Ms. Michelle Bowen, JPO MRAP	9002 - Key Considerations for Building Highly Available, Mission-Critical Systems Mr. Stephen Mills, GoAhead Software
TRACK 3 Modeling & Simulation Bayview I	Mr. Jim Coolahan, JHU/APL	8836 - Producibility Modeling & Simulation Needs for Early Systems Engineering Evaluations of Alternative Design Concepts Dr. Al Sanders, Honeywell Aerospace	8810 - Using Simulation to Define and allocate probabilistic Requirements Ms. Yvonne Bijan, Lockheed Martin Aeronautics	8923 - Integration of Operational Simulations With Physics-Based Models For Engineering Analysis Mr. Stephen Guest, Lockheed Martin Aeronautics
TRACK 2 Logistics Systems Bayview II	Mr. Joel Moorvitch, *Raytheon Company* and Mr. Anthony Stampone, *OSD-ATL*	8834 - Tailoring Systems Engineering for Technical Support of Legacy Products Mr. Joseph Skandera, BAE Systems	8837 - Injecting Requirements into Sustainment: UEWR RDA Mr. Jonathan Casey, Raytheon Integrated Defense Systems	9092 - The role of simulation in tracking mobile assets using RFID technology Mr. Swee Leong, National Institute of Standards and Technology
TRACK 1 Architecture Bayview III	Mr. Joe Kuncel, *Northrop Grumman Corporation*	9025 - Defining, Assessing, and Improving Architecture Competence Ms. Suzanne Garcia, Software Engineering Institute	8971 - Advancing Systems Engineering Practice using Model Based System Development Mr. Sanford Friedenthal, Lockheed Martin Corporation	9004 - Evolving Systems Engineering through Model Driven Functional Analysis Dr. Mark Blackburn, Systems and Software Consortium

2009 LT GEN THOMAS R. FERGUSON, JR.
SYSTEMS ENGINEERING EXCELLENCE AWARD

The National Defense Industrial Association's Systems Engineering Excellence Awards were established in 2003 to honor the memory of Lt Gen Thomas R. Ferguson, Jr., USAF, whose leadership embodied the highest ideals in Defense Systems development and deployment.

The awards are given to an individual and to a group demonstrating outstanding achievement in the practical application of Systems Engineering principles, promotion of robust systems engineering principles throughout the organization, or effective systems engineering process development during the previous year. Their systems engineering contributions should have demonstrably helped achieve significant cost savings due to new or enhanced processes procedures and/or concepts, increased mission capabilities, or substantially increased performance. The 2009 awardees are:

- Systems Engineering Individual Leadership Award: *Mr. Brian Wells*
- Systems Engineering Group Award: *Center for Advanced Life Cycle Engineering*

PAST AWARD WINNERS:

2003:
- Systems Engineering Individual Leadership Award: *Mr. Robert Rassa*

2004:
- Systems Engineering Individual Leadership Award: *Honorable Mike Wynne*

2005:
- Systems Engineering Individual Leadership Award: *Mr. Mark Schaeffer*

2006:
- Systems Engineering Individual Leadership Award: *Mr. Kelly Miller*
- Systems Engineering Individual Practitioner Award: *Mr. David Strimling*
- Systems Engineering Group Award: *NUWC Division Newport Critical Transducer Program Staff*

2007:
- Systems Engineering Individual Leadership Award: *Mr. Robert Skalamera*
- Systems Engineering Group Award: *Submarine Warfare Federated Tactical System Team*

2008:
- Systems Engineering Individual Leadership Award: *Honorable James Finley*
- Systems Engineering Group Award: *Tactical Direction Agent Team for LCS Mission Package Project*

**DEPARTMENT OF DEFENSE AND THE NATIONAL DEFENSE INDUSTRIAL ASSOCIATION
2008 TOP 5 DEPARTMENT OF DEFENSE PROGRAM AWARDS**

The Department of Defense Executive Agent for Systems Engineering and the Systems Engineering Division of the National Defense Industrial Association are pleased to announce the selections of the 2008 Top 5 Department of Defense Program Awards. The 2008 Program awardees are:

▶ *Wideband Global SATCOM: U.S. Air Force PM; Boeing Company Space & Intelligence Systems Group*
▶ *Joint Light Tactical Vehicle: U.S. Army/USMC PMs; BAE Systems Land & Armaments; General Tactical Vehicles; Lockheed Martin Systems Integration*
▶ *STRYKER Modernization: U.S. Army PM; General Dynamics Land Systems*
▶ *Broad Area Maritime Surveillance Unmanned Aircraft: U.S. Navy PM; Northrop Grumman Corporation*
▶ *Aviation Maintenance Training Continuum System: U.S. Navy PM; Raytheon Company; Paladin Data Systems Corporation*

The Awards are presented to both the DoD project office and the industry prime contractor in recognition of total program performance in a DoD/industry team effort.

PAST AWARD WINNERS:

2005 Top 5 Department of Defense Programs:
▶ *Centaur*
▶ *Integrated Exploitation Capability*
▶ *P-8A Multi Mission Maritime Aircraft*
▶ *Mission INtegration & Development*
▶ *Tomahawk Weapons System Program PMA-280*

2006 Top 5 Department of Defense Programs:
▶ *Advanced Extremely High Frequency Mission Control System*
▶ *Advanced Field Artillery Tactical Data System*
▶ *DDG 1000 MK57 Vertical Landing System*
▶ *Portable Excalibur FCS*

2007 Top 5 Department of Defense Programs:
▶ *Effects Management Tool*
▶ *MH-60 R/S Link 16*
▶ *Mortar Fire Control System - Dismounted*

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Lean Solutions Institute, Inc. (LSI) specializes in helping organizations to rapidly achieve measurable results by using benchmarking and Lean SolutionsTM (e.g., best practices to implement CMMI® in a lean way) to successfully improve client products and services. LSI helps organizations to measurably:

- Achieve ROI (e.g., 7:1)
- Increase productivity, performance and quality
- Reduce cycle time/schedule
- Reduce defects (e.g., post-release defects), rework and costs of poor quality
- Achieve world-class results (e.g., 70-90% defect removal efficiency or defects removed before test)

Systems engineering and software engineering have become more and more complex over the years. With this growing complexity, processes and procedures have become larger and more complex. Based on surveys, most organizations do not like their processes and procedures (e.g., including CMMI® Maturity Level 3-5 organizations) and they can have some of the following lean problems:
- Too large and complex (i.e., not lean or agile)
- Have non-value added activities
- Lack of visualization (e.g., pictures, diagrams, tables, charts, etc.)
- Difficult to use (e.g., poor usability)
- Lack of "chunking" which is a best practice for usability (7 plus or minus 2 principle)
- Lack of innovation
- Lack of "good metrics", not the right metrics, or not lean metrics

LSI has a patent pending approach for defining systems engineering and software engineering processes (e.g., CMMI® compliant processes) in a lean (e.g., short, usable, visual) way. Although this approach can be simple, it also scales up to handle complex processes (e.g., NASA processes). LSI uses "good diagrams" (i.e., process models) for putting the 5 W's (who, what, where, when, why) on one page. These visual one-page diagrams along with a page of support text typically replace about 25-30 pages of text. For example, lean CMMI® processes are typically about 20-25% of the size of a typical CMMI® implementation, and take half the time to implement (e.g., 1 year). In several CMMI® success stories (independently verified) using the LSI approach, organizations estimate that processes are about 20% of the size of sister business units with a similar CMMI® rated processes, and have achieved CMMI maturity levels half the time (or less).

LSI can help your organization achieve measurable results, reduce size and complexity, and improve processes and metrics to become much more lean, "value added", visual, and usable. LSI also uses an ISO/Baldrige approach to implementing CMMI®. LSI only does improvement and uses independent Authorized SEI Lead Appraisers to objectively verify LSI Lean SolutionsTM for CMMI®.

CMMI is a registered trademark of the U.S. Patent and Trademark Office by Carnegie Mellon University.

ADDITIONAL AUTHORS

Abstract ID	Abstract Title	Additional Authors
8736	The Method Framework for Engineering System Architectures (MFESA)	Mr. Donald Firesmith
8739	QUality Assessment of Software-Intensive System Architectures and their Requirements (QUASAR)	Mr. Donald Firesmith
8759	A Systems Engineering Framework for Integrating M&S Development Best Practices	Mr. Robert Lutz Shon Vick Nathaniel Horner
8770	Incorporating Maturity Assessment into House of Quality for Improved Decision Support Analysis and Risk Management	Mr. Pavel Fomin Dr. Shahram Sarkani Dr. Thomas Mazzuchi
8776	The Modular SOS Paradigm: an Availability Paradox?	Mr. Richard Volkert
8780	Net-Centric Best Practices	Mr. Higgin Ko
8789	Achieving Acquisition Excellence via Improving the Systems-Engineering Workforce	Dr. Kenneth Nidiffer
8791	Cost and Risk Impacts of the New DOD 5000 Defense Acquisition Framework	Ms. Nancy Kern
8795	Mission-based Test and Evaluation Strategy: Creating Linkages between Technology Development and Mission Capability	Mr. Christophre Wilcox
8801	Integrating Systems Engineering with Earned Value Management	Mr. Paul Solomon
8810	Using Simulation to Define and allocate probabilistic Requirements	Dr. Henson Graves
8814	Joint Mission Environment Test Capability (JMETC), Lowering technical Risk by Improving Distributed Test Capabilities	Mr. Ryan Norman
8815	Applying Systems Engineering to Operational System Improvements	Mr. Charles Coogan
8816	MIND THE GAPs-a Systems Engineering Implementation of DoDI 5000.02	Ms. Janet Jackson Mr. William Mejias Mr. Ccharles Fabian
8818	Integrated Testing enhances System Engineering. Presentation topics address the conference objectives of "Interoperability & System Integration" and "SE Effectiveness"; and the Topic Session of "T&E	Ms. Darlene Mosser-Kerner
8819	Rethinking Risk Management	Mr. Christopher Alberts
8820	Graduate Software Engineering Reference Curriculum (GSwERC)	Dr. Arthur Pyster Dr. Richard Turner Ms. Kahina Lasfer
8823	Win and Influence Design Engineers---Change Their Affordability DNA	Ms. Diane Patane
8825	Test and Evaluation in a System of Systems Environment	Dr. Shahram Sarkani Dr. Thomas Mazzuchi
8831	Human-Centered Design in Systems Engineering: Human View Methodology	Dr. Holly Handley
8833	Communicating Risk: Air Force RI3 Methodology	Mr. Gregory Barnette
8834	Tailoring Systems Engineering for Technical Support of Legacy Products	Mrs. Virginia Doyle Mr. Derrick Min
8837	Injecting Requirements into Sustainment: UEWR RDA	Noah Van Fossan
8839	Navy Systems Engineering Technical Review Process	Ms. Susan Lashomb
8842	Applications in Integrated Diagnostics	Mr. Tim Palmer
8849	Joint Integration and Interoperability Lab (JSIIL)	Mr. Martin Westphal Mrs. Margery Frisby Mr. Randy Coonts

8853	C4I Architecture for Joint ASW	Baasit Saijid Matt LeTourneau Bill Traganza
8854	Human Interoperability Enterprise and Net-Centric Operations	Dr. S. Brown Dr. Beverly Knapp
8855	Certify and Fly Right: Preparing for DO-297 Certification	Mr. Keith Custer
8863	Using Requirements Compliance to Identify Gaps Between the Technical Solution and Requirements	Mr. Richard Swanson Mr. Edward Dooley
8866	Extending FMECA to Systems of Systems	Mr. Clayton Smith
8874	The Boeing System of Systems Engineering (SoSE) Process and Its Use in Developing Legacy-Based Net-Centric Systems of Systems	Ms. Alaka Shivananda Mr. Dennis Schwarz Mr. Marion Butterfield
8875	Tomahawk Weapon System Development and Integration	Mr. Tim Patrick
8878	Advanced Simulation Course for Army Simulation Management Professionals	Stephanie Few
8880	Naval Postgraduate School Advanced Seabase Enabler Project: A Systems Engineering Case Study	Mr. Robert Brooks Mr. Steven Schroeder Mr. Paul Rakow
8885	Human Systems Integration (HSI) - Integrating Human Concerns into Life Cycle Systems Engineering	Colonel Larry Kimm
8887	Achieving a Systems Engineering Culture in a Science and Technology Laboratory Environment	Dr. James Malas Mr. Bryan DeHoff Ms. Carol Ventresca
8890	Building Safer UGVs with Run-time Safety Invariants	Dr. Phil Koopman Dr. John Bares Mr. Chris Ostrowski
8892	SysML Strategies to Characterize and Analyze Systems of Systems	Mr. Tim Bohn
8894	Air Force Initiative – High Confidence Technology Transition Planning Through the Use of Stage-Gates – Update	Dr. Claudia Kropas-Hughes Ms. Sharon Fields
8895	A Comprehensive Review of Maturity Assessment Approaches for Improved Defense Acquisition	Dr. Shahram Sarkani Dr. Thomas Mazzuchi
8898	Designing Collaborative Systems of Systems in support of Multi-sided Markets	Dr. Nicholas Whittall
8900	DOD's Weapon System Portfolio: Are Results Getting Any Better?	Ms. Cheryl Andrew
8901	Review Results of the NDIA/OSD Software Test Summit/Workshop	Elizabteh Wilson
8902	Systems Engineering Leading Indicators: Insight into Effective Systems Engineering	Mr. Gary Roedler
8908	Successful First AESA Deployment through Application of System Engineering	Mr. Christopher Moore
8913	Linking Interoperability and Measures of Effectiveness: A Method for Evaluating Architectures	Dr. John Colombi
8915	System of Systems Challenges and Solutions: Case Study Insights	Dr. David Jacques
8916	System Readiness - assessing technical risk throughout the lifecycle	Mr. Jim Thompson
8920	A Methodology for Assessing Systems Engineering Practices	Mr. David McDonnell
8923	Integration of Operational Simulations With Physics-Based Models For Engineering Analysis	Dr. William Graves
8924	Key Early Systems Engineering Activities and Products Under the New DoDI 5000.02	Dr. Don Gelosh
8929	Extending Net-Centric Quality of Service to Systems of Systems	Dr. John Colombi Dr. Kenneth Hopkinson Dr. Michael Grimaila
8931	The Role of Mentoring in Developing the Systems Engineering Workforce	Dr. Don Gelosh

8933	Early Systems Engineering Planning: Milestone A Systems Engineering Plan	Dr. Judith Dahmann
8935	Systems of Systems Systems Engineering and Test and Evaluation	Mr. John Palmer Dr. JoAnn Lane Mr. George Rebovich
8942	DoD Systems of Systems Update	Dr. William Asrat
8946	Protecting the Mission, Preserving Legacy and Promoting Growth	Kerri Van Horne
8947	Report on a Study on Management Concepts for Broadly-Needed Modeling and Simulation Tools in the U.S. Department of Defense	Dr. Katherine Morse Mr. Randy Saunders
8950	Live, Virtual, Constructive Architecture Roadmap: The Quest for Interoperability, Standards, and Reuse	Dr. Amy Henninger
8955	TUTORIAL: Early Systems Thinking and Technical Planning in Weapon System Concept Development (HALF DAY)	Ms. Robin Wright
8960	A Distillation of Lessons Learned from Complex System of Systems Acquisitions	Arthur Pyster Kenneth Kepchar Ann Teford Mark Weitekamp
8963	Air Force Concept Maturity Assessment	Mr. Jeff Loren
8966	Improving Systems Engineering Curriculum Using a Competency-Based Assessment Approach	Dr. Wiley Larson
8967	Generating Visual and Interactive Output from System Engineering Tools	Steven Dam Chris Ritter
8973	C-17 Transition to Criteria-based Airworthiness Certification	Mr. Michael McKinney
8974	Transforming Systems and Software Engineering Across an Enterprise	Mr. Timothy Chaill
8976	A Systems Engineering Model for Roadmap Alignment	Mr. John Fitch Ms. Harsh Desai
8980	Using Simulink and Model-driven Engineering Techniques for Integrated Flight Simulation Development	Brett Collins Jesse Carlaftes
8982	Systemic Root Cause Analysis – Driving Improvements into the Acquisition Process	Mr. Jim Thompson Mrs. Laura Dwinnell
8990	Systems Engineering for Rapid Capability Development	Ms. Kathleen Harger
8992	1/2 Day Tutorial: System of Systems (SoS) Quality Attribute Specification and Architecture Evaluation	Mr. William Wood Mr. Timothy Morrow Mr. John Klein
8996	Engineering Improvement in Software Assurance: A Landscape Framework	Dr. Carol Woody Christopher Alberts Andrew Moore
8998	Human Systems Integration – Ensuring the Human is Considered "Left of A"	Ms. Bridget Simpkiss
8999	Program Signature Measurement	Mr. Gordon Kranz Mr. Christopher Miller Mr. Gerald Tarasek
9003	CMMI for Executives	Mr. Wendell Mullison
9004	Evolving Systems Engineering through Model Driven Functional Analysis	Mr. Sharad Kumar
9007	Technology Maturation for the Automated Aerial Refueling (AAR) Project	Mr. Jacob Hinchman Mr. Daniel Schreiter Mr. Ba Nguyen Mr. Jordan Adams
9010	Network Enabled Weapons, A System Engineering Approach to Achieve Interoperabilty	Mr. Wyane Willhite

9012	Human Systems Integration: Defining and Validating a Framework for Enhanced Systems Development	Alisha Belk Dr. Robert Smillie Major Andrew Gepp, USMC
9014	SAVI: Aerospace Platform Development and Certification Using Modeling and Simulation to "Integrate, then Build"	Dr. Don Ward
9015	Challenges and Benefits of applying ISO STEP	Mr. Charlie Stirk
9017	Linking Systems Engineering Artifacts with Complex Systems Maturity Assessments	Mr. Kenneth Michaud Mr. Richard Volkert Mr. Eric Forbes Dr. Joes Ramirez-Marquez
9021	Critical Success Factors for Milestone Review Risk Identification	Dr. Jo Ann Lane
9023	Department of Energy Office of Environmental Management's Technology Readiness Assessment (TRA)/Technology Maturation Plan (TMP) Process Guide and Plans for TRA Training	Dr. Stevem Krahn Mr. Kurt Gerdes Dr. Herbert Sutter
9024	Dynamic Modeling of Programmatic and Systematic Interdependence for System of Systems Acquisition	Dr. Brian Sauser Dr. Muharrem Mane Mr. Alex Gorod
9025	Defining, Assessing, and Improving Architecture Competence	Len Bass Paul Clements Suzanne Garcia Rick Kazman
9026	Early SE Determination of Best-Fit System Life Cycle Processes	Dr. Jo Ann Lane
9027	Department of Energy Office of Environmental Management's Technology Readiness Assessment (TRA) Process	Mr. Kurt Gerdes Dr. Steven Krahn Dr. Herbert Sutter
9031	Supportability Lessons Learned with Line Replaceable Modules	Mr. Joel Moorvitch
9034	SUSTAINMENT AND CONTINUED INSTITUTIONALIZATION OF BEST PRACTICES AND CMMI® AT SPAWAR	Mr. Michael Knox
9035	Enabling Collaborative Decision Making: A Process for Integrating Novel Systems Engineering Tools and Methods for Renewable Energy Portfolio Analysis	Mr. Thomas McDermott
9041	On Modeling and Simulation Methods for Capturing Emergent Behaviors for Systems of Systems	Dr. Tommer Ender Dr. Santiago Ballestrini-Robinson
9043	Implementing the Materiel Availability KPP in DoD acquisition programs—balancing life-cycle costs with warfighter needs	Mr. Pete Nolte Mr. John Quackenbush
9046	Developing an Introductory Systems Engineering Practitioners Course: "Model-Based Systems Engineering (MBSE) With SysML"	Mr. Michael Pafford
9054	A-10 Avionics System Architecture Trade Study and Analysis (AVSATA) Program	Mr. Adam Grimm Mr. Jerry Coates
9059	Smallsat Conceptual Design Trade and Cost Modeling Tool	Mr. John Carsten Mrs. Dana Sherrell Mr. Mike Paisner Mr. Mark Sutton
9060	Modeling and Simulation Support for the Systems Engineering of Systems of Systems (short title "M&S Support for SoS SE")	Dr. William Asrat
9064	Economics of Human Systems Integration: Early Life Cycle Cost Estimation Using HSI Requirements	Dr. Ricardo Valerdi
9065	Rapidly Implementing Lean CMMI Processes That Meet Business Needs	Mr. Tim Olson
9072	1/2 Day Tutorial - Leveraging the Defense Acquisition Program Support (DAPS) Methodology for Program Success	Mr. Peter Nolte

9076	Assessing Systems Engineering Personnel Competency: Framework and Tool Experience	Mr. Dan Ingold Dr. Paul Componation Dr. Richard Turner Ingold Dan
9078	Tutorial: Organizational Implications of Systems of Systems	Ms. Lisa Brownsword Mr. Patrick Kirwan
9080	Rapid Systems Engineering of the MRAP Gunner Restraint System Saves Lives	Mr. Michael Perricane
9081	Testing in Service-oriented Environments	Mr. Edwin Morris Mr. Sriram Balasubrama-niam
9083	Requirements Engineering for Systems of Systems	Mr. Edwin Morris Dr. Dennis Smith Grace Lewis Mr. Patrick Place
9094	DoD Green Procurement Program Update and Path Forward	Ms. Sandy Ross Ms. Christina Graven
9095	Acquisition ESOH Risk Management and HAZMAT Management Part I: Hazardouse Materials Management Plan	Mr. Sherman Forbes
9097	Acquisition ESOH Risk Management-How to Make It Work	Mr. Sherman Forbes
9103	The Economics of CMMI	Mr. Mike Campo
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