



NEWSLETTER

Vol. 5: Issue No. 4

August 2007



*Thanks for renewing your
INCOSE membership!*



UPCOMING EVENTS

Tuesday, September 18 Speaker Meeting

"Combined Modeling and Requirements Analysis"

Jeff O. Grady, INCOSE Fellow
President, JOG System Engineering, Inc

Location

Jet Propulsion Laboratory (JPL)
4800 Oak Grove Drive
Pasadena, CA 91109

Networking 5:30 pm
Presentation 6:30 pm

Friday, September 18 Tutorial

"Combined Modeling and Requirements Analysis"

Jeff O. Grady, INCOSE Fellow
President, JOG System Engineering, Inc

Location

California Institute of Technology
Beckman Laboratory, Bldg. 76, Rm. BBB-24
1200 E. California Blvd
Pasadena, CA 91126

7:30 am – Registration, check-in, Coffee
8:15a.m. – Noon – Tutorial with mid-morning break
Noon – 1:30p.m. – Lunch (not included or provided
by INCOSE)
1:30 p.m. – 4:45 – tutorial with mid-afternoon break

October Speaker Meeting

*Tentatively set for first week of the month,
topic, speaker and location to be announced*

November Speaker Meeting and Tutorial

*Tentatively set for first or second week of the month,
topics, speakers and locations to be announced*

INCOSE-LA Holiday Party

December 2007, date and location to be announced

Tuesday, September 18 Speaker Meeting

"Combined Modeling and Requirements Analysis"

Jeff O. Grady, INCOSE Fellow
President, JOG System Engineering, Inc

Jet Propulsion Laboratory (JPL)
4800 Oak Grove Drive
Pasadena, CA 91109

Networking 5:30 pm (with substantial snacks)
Announcements and Speaker Introduction 6:20 pm
Speaker 6:30 pm

Members Free

Guests – Free, \$10.00 donation suggested (for the snacks,
chapter pays for members)

ABSTRACT: Jeff Grady will make the proposal that system engineers and software engineers join forces to adopt or evolve a combined modeling capability that all can use to clearly understand a problem space, publish specifications containing the requirements derived from those models, and link up traceability across the HW-SW valley. The modeling artifacts are available today based on the tremendous work accomplished by system and software engineers within the OMG to encourage this combined model but there are some impediments that may make it difficult to gain acceptance in the system engineering community. Jeff will outline the proposed combined model composed of UML, SysML, and four artifacts pulled from traditional structured analysis, identify the problems in closing in on a combined model, and challenge our members to engage their minds to think about, interact within other engineers in their enterprise and INCOSE to resolve the modeling dilemma and move their own capability and understanding toward mastery.



BIOGRAPHY: Jeff Grady has been the President of JOG System Engineering, Inc., a system engineering consulting firm focused on assessment of current client capability coupled with education leading to planned improvements since 1993. Formerly, engineering manager of Systems Development at General Dynamics Space Systems Division working on space transport and energy systems. Other experience over a period of 30 years in industry included: system engineer with

GD Convair on cruise missiles; system engineer, project engineer, and field engineer with Ryan Aeronautical on unmanned photo reconnaissance, electronic warfare, ELINT/SIGINT, and target aircraft systems; and customer training instructor with Librascope on underwater fire control systems (ASROC and SUBROC). Served in the U.S. Marines in the aviation communications field.

Jeff is a charter member of the International Council on Systems Engineering (INCOSE). He was recognized by his peers as an INCOSE Fellow in 2001, cited for "industrial education in the systems engineering field and for establishing the role of INCOSE as a teaching organization." He was selected as an INCOSE Founder in 2003, cited for "his seminal role in founding INCOSE, his service as its Secretary, his leadership in inaugurating and editing the Systems Engineering Journal, and his major contributions to systems engineering education." Jeff is also recognized as an INCOSE CSEP.

His system engineering knowledge has been thoroughly tested as a lecturer and published author. Over a period of 13 years Jeff has developed and presented several hundred system engineering courses and tutorials through universities, short course companies, and by direct sale to companies, in some cases building special courses for ownership by clients such as FAA and Raytheon among others. His company's program undergoes continuous improvement based on experience dealing with clients as a consultant, new research, and critical feedback from clients. After recent consulting experience, for example, with a client using UML in the development of new Army vehicles, he made significant improvements in his requirements course relative to HW-SW integration.

Jeff is currently a member of the Purdue University Graduate Faculty. He has lectured in systems engineering programs at or for University of California San Diego, Riverside, Berkeley, and Irvine; Indiana-Purdue University; University of Alabama at Huntsville; John Hopkins University, and Old Dominion University. He has also lectured nationally and internationally on-site at companies. Member of the UCSD System Engineering Advisory Board and continues to teach system engineering courses there. He has also taught many system engineering courses for short course companies including Applied Technology Institute, Technology Training Corporation, Execuspec, and Professional Education International.

Author of seven recent books in the system engineering field. His latest book *System Verification* was published by Elsevier Academic Press in April 2007 and *System Requirements Analysis*, was published by Academic Press in January 2006. Previously his five other published books included *System Requirements Analysis*, McGraw-Hill, 1993; *System Integration*, CRC Press, 1994; *System Engineering Planning and Enterprise Identity*, CRC Press, 1995; *System Validation and Verification*, CRC Press, 1997; and *System Engineering Deployment*, CRC Press, 1999. Jeff is now doing research on two more books in the system engineering field.

Jeff holds a Bachelor's degree in Mathematics from San Diego State University and an MS in Systems Management from University of Southern California.

RESERVATIONS: You must RSVP by Sept. 14, 5:00pm via the INCOSE-LA website (www.incose-la.org) OR to Paul Su (registration@incose-la.org, 310-336-2602) and provide the following information: name, affiliation, email address, and phone number.

DIRECTIONS TO JPL

From the INLAND EMPIRE, head West on the I-210 FWY into Pasadena and merge/exit onto the 210 FWY North (aka West) toward San Fernando. Follow the "210 FWY ALL" directions below.

From WEST LA, head EAST on the I-101/134 FWY toward Glendale, merge onto the 2 FWY North, then get on the 210 FWY (South aka East) toward Pasadena. Follow the "210 FWY ALL" directions below.

From LONG BEACH, head NORTH on the I-710 FWY, take the exit CA-60 FWY West toward Downtown Los Angeles, merge onto I-5 North toward San Fernando/Glendale/Burbank, merge onto the 2 FWY North toward La Canada/Montrose/La Crescenta - do not take CA134/1-210 East exit but continue North on CA-2 and then exit onto the 210 FWY (South aka East) toward La Canada/Pasadena. Follow the "210 FWY ALL" directions below .

210 FWY ALL: From the 210 FWY toward La Canada, take the Berkshire/Oak Grove exit (there are signs for JPL), go east, turn left on Oak Grove and follow Oak Grove until you enter the JPL complex. Park in visitor parking on your left, just before the guard gate. Cross the street and go back down the sidewalk to the von Karman auditorium.

SPEAKER MEETING WEBCAST INFORMATION

Remote sites will be available for receiving the presentation via live webcasts. RSVP Required by August 3 via the INCOSE-LA website (www.incose-la.org <<http://www.incose-la.org/>>) or to Paul Su (registration@incose-la.org, 310-336-3602). Typical remote locations have included one or more of the following sites (check website for current participating locations):

- Palmdale - Aero Institute - Open Site
- Palmdale - Lockheed and Northrop - Employees only
- Woodland Hills - Northrop Grumman - Employees only
- Irvine - UC Irvine - Open Site
- Sylmar - St. Jude Medical - Employees only
- Long Beach - Boeing - Employees only
- Huntington Beach - Boeing - Employees only
- Pasadena - JPL - Open Site

Friday, September 21 Tutorial

“Combined Modeling and Requirements Analysis”

*Jeff O. Grady, INCOSE Fellow
President, JOG System Engineering, Inc*

INCOSE LA Chapter

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California Institute of Technology
Beckman Laboratory, Bldg. 76, Rm. BBB-24
1200 E. California Blvd
Pasadena, CA 91126

DATE/TIME

Friday, September 21

7:30 am – Registration, check-in, Coffee
8:15a.m. – Noon – Tutorial with mid-morning break
Noon – 1:30p.m. – Lunch (not included or provided
by INCOSE
1:30 p.m. – 4:45 – tutorial with mid-afternoon break

COST

\$30.00 for INCOSE members, \$45.00 for non-members

(Lunch and snacks are NOT included. Attendees are on their own to purchase their own lunch and break snacks. The Cal Tech campus has several cafes where lunch and snacks may be purchased. Information will be provided at the tutorial as to the location of these. In addition, there are vending machines available for drinks and snacks.)

ABSTRACT: Jeff Grady will make the proposal that system engineers and software engineers join forces to adopt or evolve a combined modeling capability that all can use to clearly understand a problem space, publish specifications containing the requirements derived from those models, and link up traceability across the HW-SW valley. The modeling artifacts are available today based on the tremendous work accomplished by system and software engineers within the OMG to encourage this combined model but there are some impediments that may make it difficult to gain acceptance in the system engineering community.

In this tutorial, the details of the combined modeling approach will be covered in accordance with the following six-hour outline:

- 1 Introduction
- 2 Traditional Structured Analysis Overview
- 3 UML Overview
- 4 SysML Overview
- 5 A Combined Specification Format
- 6 A combined Process Description and a Future Devoid of Paper Specifications

The fundamentals of the combined modeling approach include the union of UML and SysML extended to include the specialty engineering scoping matrix to provide discipline for software QAW exercises as well as system and hardware requirements analysis, the three-tiered environmental requirements analysis construct, a common requirements analysis sheet (RAS) as the transform between functional and/or behavioral and product entities planes and capture all requirements that are derived from the modeling work, and a common product entity structure into which product entities flow whether they are identified in response to the application of SysML or UML techniques.

A combined software and hardware development process will be offered that respects Sullivan's form follows function notion and applies a top down development orientation. The same transform between functional/behavioral and product entity planes is coordinated across hardware and software so as to encourage improved hardware-software integration.

A single specification standard is offered that marries the use case specification to the SRS format for those programs that require published specifications. The case is also made for the alternative where the requirements are accepted as residing within the model as it is extended to develop the design solution that will be compliant due to the continuity of the model. However, there are doubters about such a major change in the system development process. The tutorial will close out on the potential for model-driven development closing this door eventually.

BIOGRAPHY: See write up on September 18 Speaker Meeting.

DIRECTIONS TO CALTECH

Caltech is easily accessible from both the 110 (Harbor) Freeway (southwest of campus) and the 210 (Foothill) Freeway (north of campus).

If you're taking the 110 freeway, follow the freeway north until it ends (where it becomes the Arroyo Parkway). Take the Arroyo Parkway straight ahead (north); turn right (east) on California Blvd. Proceed approximately one and a quarter miles. The Caltech campus will be on your left-hand side. Turn left (north) at Hill Ave. Turn left (west) at San Pasqual St. Turn right (north) onto Holliston Ave. Proceed to the Holliston Parking Structure on your right at 370 S. Holliston Ave. (Building #66 on the campus map) to register your car.

If you're taking the 210 freeway, exit at Hill Avenue; turn south on Hill. Take Hill south to San Pasqual St. and make a right (west). Turn right (north) onto Holliston Ave. Proceed to the Holliston Parking Structure on your right at 370 S. Holliston Ave. (Building #66 on the campus map) to register your car.

Member Announcements

Honourcode, Inc., is offering a special discount for INCOSE members for an upcoming 3 day Systems Engineering course. The course, entitled "Systems of Systems (Technical Management in a Networked World)," is a truly unique course combining complexity theory and its application to very complex, networked systems – solutions in the areas of architecting, integration, collaboration, and T&E – with the SwarmBot Collective Emergent Robotics exercise.

A full 20% discount is being offered on this one course delivery (Los Angeles area, 10-12 Sep) to INCOSE members. To take the discount, follow the instructions on the course registration web page at <http://www.hcode.com/crsinfo-sos.htm>.

Course Instructor: Dr. Scott Workington, Sr. Associate, Honourcode, Inc.

INCOSE LA Chapter

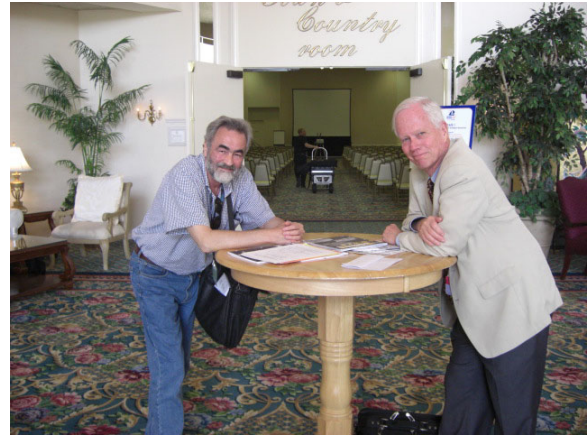
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Photos from the 2007 INCOSE International Symposium

Photographs by Jim Manson



The Board and Officers wish to welcome the following new members in the Los Angeles Chapter of INCOSE:

Note: The information listed below is pulled from the member directory and is based upon your initial membership application. If the information is not correct or complete, then please access the member directory (at www.incose.org) to update your information.

Name	Title	Company
Walter Wilson	Software Engineer Staff	Lockheed Martin
Robert Matigan	Systems Test Engineer	Northrop Grumman Corporation
Thomas Chan		The Boeing Company

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CSEA
**CONFERENCE ON SYSTEMS
 ENGINEERING RESEARCH**
An International Conference

Call for Papers

Sixth Annual Conference on Systems Engineering Research

April 4-5, 2008 Los Angeles, California
 Crowne Plaza Hotel, Redondo Beach
<http://www.incose-la.org/cser2008/>

Topics

We invite original research papers addressing the conception, design and architecting, development, modeling and simulating, production, operation and support of these systems; definition of metrics of performance, and improvement methods; assessment and mitigation of risks; definition of critical success factors, and best practices. The refereed research papers at the conference will be complemented with invited talks. Abstracts are invited in the following broad areas:

- Ultra large-scale Systems Engineering
- Agile Systems Engineering, Development, Integration and Deployment
- Context-aware, Secure Net centric Systems
- Robust and Sustainable System Designs and Architectures
- Integrated Systems and Software Engineering and Development
- Application of Systems Engineering to the Extended Enterprise
- Virtual Collaborative Engineering Environments and Organizations
- Systems Architecting and Architecture Tradeoff Analysis
- Cognitive Engineering and Human-Systems Integration

Abstracts

Abstracts must include:

1. A Title
2. Full Author Name and Affiliations
3. Complete Address for the Corresponding Author

Doctoral candidates pursuing systems engineering related research are specially encouraged to submit abstracts. One technical track at the CSER'08 will be devoted to papers by doctoral candidates.

Please submit your abstract electronically in Microsoft Word (not to exceed 600 words) to:

Dr. Azad Madni, Chair, Conference Technical Program
 Chief Executive Officer
 Intelligent Systems Technology, Inc.
 Santa Monica, California 90405

Tel: 310-581-5440 x144; cser08@IntelSysTech.com



The University of Southern California in collaboration with Stevens Institute of Technology presents the 6th annual Conference on Systems Engineering Research.

The primary conference objective is to provide practitioners and researchers in academia, industry, and government a common platform to present, discuss and influence Systems Engineering research with the intent to enhance Systems Engineering practice and education. Papers are solicited pertaining to research in all these areas.

Organized by the University of Southern California (USC) in collaboration with Stevens Institute of Technology, managed by the Los Angeles Chapter of the International Council on Systems Engineering (INCOSE). Additionally, CSER 2008 is technically co-sponsored by the IEEE Systems Council, INCOSE's SEANET, MIT's "Systems Engineering Advancement Research Initiative," Institute of Industrial Engineers, and Intelligent Systems Technology, Inc.

Milestones

Abstract submission: Nov. 1, 2007
 Acceptance notification: Jan. 3, 2008
 Camera ready copy due: Feb. 1, 2008



Return Address:

**PO Box 490341
Los Angeles, CA 90049**

Forwarding Address Requested

The International Council on Systems Engineering (INCOSE) is an organization formed for the purpose of advancing the art and science of systems engineering in various areas of the public and private sectors. The Los Angeles Chapter meets several times per year for dinner meetings, and additionally sponsors tutorials and other activities of interest to those in the systems engineering field or related fields. L. A. Chapter Officers are as follows:

2007 Officers and Board

President:	James Manson III	james.a.manson-iii@boeing.com or	president@incose-la.org
Vice-President:	John "David" Boyd	john.boyd@incose.org or	vicepresident@incose-la.org
Past President:	Gina Kostelecky-Shankle	Gina.Kostelecky-Shankle@ngc.com or	pastpresident@incose-la.org
Treasurer:	Marsha Weiskopf	marsha.weiskopf@aero.org or	treasurer@incose-la.org
Secretary:	Lee-Ann Seeling	lseeling@trichord.com or	secretary@incose-la.org
Membership:	Paul Cudney	paul.cudney@incose.org or	membership@incose-la.org
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Technical Society Liaison:	Edmund Conrow	info@risk-services.com	
Chapter Recognition Chair:	Dana Pugh	Dana.N.Pugh@boeing.com	
Webcast Event Chair:	Benjamin Luong	Benjamin.Q.Luong@boeing.com	
CSER 2008 Conf. Mgmt Chair:	Malina Hills	malina.m.hills@aero.org	
CSER 2008 Conf. Cont. Chair:	Scott Jackson	jackessone@cox.net	

Those interested in INCOSE membership please contact Paul Cudney - paul.cudney@incose.org. If you wish to be placed on our E-mail distribution, please contact Susan Ruth - susan.c.ruth@aero.org.