



# NEWSLETTER

Vol. 6: Issue No. 7

September 2008



2002, 2004-07



## UPCOMING EVENTS

### **Introductory 2-Day Course: Fundamentals of Systems Engineering**

September 9 and 10  
Cal Poly San Luis Obispo Campus  
Cost: FREE

*See page 7 for more information*

### **September Speaker Meeting**

**Performing as an Effective SE&I Contractor in Support of the  
Global Positioning Systems Wing**

**Speaker: John Silvas**

September 16, 5:30 p.m. to 8:30 p.m.  
The Aerospace Corporation  
2350 E. El Segundo Blvd.  
El Segundo, CA 90245

*Remote sites to be available*

Cost: Members: FREE, non-members: \$10  
RSVP by September 13

*See page 2 for more information*

### **USC Viterbi School of Engineering 2nd Annual Rehtin Keynote Lecture**

**The Human Factor: Managing Technical Complexity and  
Creativity in the 21st Century**

**Speaker: Dr. Wanda M. Austin**

September 25, 4:00 p.m. to 5:30 p.m.  
USC Andrus Gerontology Auditorium  
Cost: FREE

*See page 3 for more information*

## Future Events

### **November Two-Day Tutorial**

**DAY 1: An Introduction to the OMG Systems  
Modeling Language (OMG SysML™)**

**DAY 2: Object-Oriented Systems Engineering Method (OOSEM)**

**Speaker: Sanford Friedenthal**

November 18-19, 8:30 a.m. to 4:30 p.m.  
CalTech

*See page 6 for more information*

### **2009 INCOSE-LA Mini-Conference**

Presentations and forums of interest to the systems engineering  
professional community

Speakers: In work

February 7, 2009 at Loyola Marymount University

#### **For up-to-the-minute event details:**

- ◆ Check future editions of the Newsletter
- ◆ Watch your email for the Reflector
- ◆ Visit the INCOSE-LA website at [www.incose-la.org](http://www.incose-la.org)

## **Message from the President: Opportunities Abound Members are our Greatest Asset David Boyd, Chapter President**

Did you know that members such as you, the reader, are the Chapter's primary source for the monthly speaker meeting presentations, tutorials, and articles for the newsletter? The Chapter is also sustained by dedicated engineers who volunteer their time and knowledge toward the advancement of systems engineering and INCOSE. We are working on plans for 2009. If you are interested in any of the following opportunities, then please contact your Chapter President, David Boyd ([john.boyd@incose.org](mailto:john.boyd@incose.org)), or your Chapter Vice President, Eric Belle ([ericbelle@yahoo.com](mailto:ericbelle@yahoo.com)):

- ★ Board of Directors
- ★ Presenting at a Monthly Speaker Meeting
- ★ Contributing to the Monthly Newsletter
- ★ Presenting a Tutorial
- ★ 2009 Mini-Conference
- ★ Volunteering for any of the above.

For Speaker Meetings and Tutorials, the presenter does not have to be a member of INCOSE. If you know of someone who has something interesting to present on any aspect Systems Engineering, then please let us know! If there is a topic that interests you, then please let us know.

## **INCOSE-LA Mini-Conference 2009: Planning Update PLUS: Call for Volunteers Eric Belle, Chapter Vice-President**

The INCOSE-LA Board of Directors is pleased to announce the appointment of Shah Selbe and Richard Emerson as the Conference Chairman and Technical Chairman of the 2009 INCOSE-LA Mini-Conference. In addition, meetings are underway to firmly establish the conference theme and layout.

Additional volunteers are also being actively recruited at this time as the committee is starting to take shape. Interested parties are encouraged to contact either John David Boyd, INCOSE-LA President at [john.boyd@incose.org](mailto:john.boyd@incose.org), or Eric Belle, INCOSE-LA Vice President at [eric\\_c\\_belle@raytheon.com](mailto:eric_c_belle@raytheon.com).

## September Speaker Meeting: Performing as an Effective SE&I Contractor in Support of the Global Positioning Systems Wing

Presented by: Mr. John Silvas,  
INCOSE Certified Systems Engineering Professional

### Particulars

Tuesday, September 16, 2008, 5:30 p.m.-8:30 p.m.  
5:30 p.m.: Networking, light refreshments  
6:30 p.m.: Presentation

The Aerospace Corporation  
2350 E. El Segundo Blvd.  
El Segundo, CA 90245  
*Remote sites to be available*

**Cost:** INCOSE Members are FREE;  
Suggested donation of \$10 for non-members

**Abstract:** As one of the United States' most critical infrastructure assets, the Global Positioning System (GPS) must not only be properly maintained to support current applications and users worldwide, but also next generation capabilities must be designed, developed, integrated, and tested in order to properly upgrade and sustain the critical capabilities of Positioning, Navigation, and Timing (PNT) well into the new millennium.

The Space & Missile Systems Center (SMC) at Los Angeles Air Force Base – Global Positioning Systems Wing (GPSW) is responsible for maintaining and sustaining the GPS mission. This involves supplying new space vehicles to sustain the current constellation of satellites, an intricate and complex ground infrastructure to command and control them, and development of next generation of military GPS receivers to enable military customers around the globe to carry out their missions each and every day. Modernization of the constellation with new signals and capabilities is the next big challenge. How will the U.S. Air Force (USAF) perform the complex tasks associated with leading and overseeing the integration of next generation GPS capabilities into the current operational system? What single contractor could be free from Organizational Conflict of Interests (OCI) yet still assist the USAF with performing the role of lead integrator for GPS?

In March of 2007, the GPSW hired an independent Systems Engineering and Integration (SE&I) contractor team (SAIC led with 14 subcontractors) to help them accomplish this mission. The SE&I contractor team is responsible for providing the GPSW with a proactive technical management approach that will enable the more effective simultaneous execution of multiple acquisition programs in varying phases of the lifecycle.

Mr. Silvas will present an overview of the SE&I contractor unique roles and functions in support of the GPSW enterprise to include some key challenges and mitigating steps currently

being taken to overcome these challenges. More specifically, attend this presentation to learn more about:

- The unique and agile set of skills required to be an effective SE&I for the GPSW enterprise
- The challenges of being part of the “integrated Government Team” (Military, Civilian, FFRDC, and SETA) that is attempting to transform into the lead integrator for the GPS
- The myriad of “integration” challenges facing the Wing and what the SE&I is doing to lead the charge in mitigating them
- How the “nuts and bolts” of Systems Engineering (i.e., infrastructure related functions) are being applied in entirely new ways to support the GPSW enterprise’s unique set of challenges
- How the first ever enterprise GPS System Engineer Plan (SEP), at the direction of the Wing Commander, has become the focal point for proactively managing the SEIT operation as well as the seven GPS acquisition programs within the GPSW

**Biography:** Mr. John Silvas is an INCOSE Certified Systems Engineering Professional (CSEP - Jan. '06) with over 15 years of SE experience.



He has been working at Booz Allen Hamilton for the last 10 years providing professional consulting services in the SE functional areas of requirements analysis, architecture development, technical management and control planning, and process improvements to mostly large scale DoD acquisition programs. Since moving from Northern Virginia to Los Angeles 5 years ago, Mr. Silvas has emerged as a Space and Missile Systems Center (SMC) leader in developing System Engineering Plans (SEP) for various Wings and Programs.

He has successfully led or advised on such plans as the enterprise GPS SEP, MILSATCOM Wing SEP, Satellite Control Network Contract (SCNC) SEP, and Land Based Strategic Deterrent (LBSD) program SEP. His approach involves providing Chief System Engineers with thought leadership and guidance on further developing their System Engineering, Integration, and Test (SEIT) strategies, objectives, and processes and then leading the effort to document them in the form of a SEP per DoD, Air Force, and SMC guidelines. Other key clients over the past 10 years have included Headquarters Air Force, the National Security Agency (NSA), the Defense Information Systems Agency (DISA), Joint Terminal Engineering Office (JTEO), Headquarters Marine Corps, and Arabsat in Saudi Arabia.

Mr. Silvas' current client is the GPS Wing where he leads the SE&I Plans & Process Team. His team's charter includes developing and maintaining the enterprise GPS SEP along with proactively conducting a series of process improvement initiatives in support of Air Force Smart Objectives for the 21<sup>st</sup> (AFSO21) Century objectives.

*Continued on Page 3*

## **September 16 Speaker Meeting**

*Continued from Page 2*

Prior to joining Booz Allen, Mr. Silvas was enlisted in the U.S. Air Force during the first Gulf War performing Signals Intelligence (SIGINT) in support of various National objectives.

His 3 year active duty tour, plus 5 years of active reserve duty at the NSA, provided him with a solid foundation in the Satellite Communications (SATCOM) operations and intelligence analysis. While in the Air Force Reserves, he attended Virginia Tech in Blacksburg, Va. where he received a B.S. in Industrial Design in May of '98. He is pursuing a Master's Degree in SE. He is also the father of two boys ages 17 and 2.

**Reservations:** You must RSVP to attend at The Aerospace Corp, NO EXCEPTIONS. Registration deadlines: September 8 for foreign nationals or September 13 for U.S. citizens/resident aliens.

RSVP online at [www.incose-la.org](http://www.incose-la.org)

RSVP by email to [registration@incose-la.org](mailto:registration@incose-la.org) (please include "INCOSE-LA September Mtg" in subject line)

- ◆ Provide the following information: name, affiliation, citizenship, email address, and phone number
- ◆ U.S. Citizens bring a picture ID (Driver's License)
- ◆ Resident Alien bring your Valid Resident Alien I.D. (Green) Card

### **Directions to The Aerospace Corporation:**

<http://www.aero.org/corporation/locations/elsegundo.html>

#### **From the southbound San Diego Freeway (Interstate 405)**

1. Exit at El Segundo Blvd (La Cienega Blvd). (just past the I105 interchange)
2. Turn left at bottom of ramp onto La Cienega Blvd.
3. At El Segundo Blvd., turn right
4. Get in left lane after Aviation Blvd.
5. Enter gate\* for The Aerospace Corporation on left side street

#### **From the northbound San Diego Freeway (Interstate 405)**

1. Exit at El Segundo Blvd. (just before the I105 interchange)
2. Turn left at bottom of ramp onto El Segundo
3. Get in left lane after Aviation Blvd.
4. Enter gate\* for The Aerospace Corporation on left side street

#### **From the westbound Century Freeway (Interstate 105)**

1. Take southbound I-405 exit
2. Stay in right lane
3. Exit at El Segundo Blvd. (exit before ramp merges with I405)
4. Turn left at bottom of ramp onto El Segundo Blvd.
5. Get in left lane after Aviation Blvd.
6. Enter gate\* for The Aerospace Corporation on left side street

#### **From the Los Angeles International Airport**

1. Exit airport along Century Blvd.
2. Turn right on Sepulveda Blvd. (southbound)
3. Turn left on El Segundo Blvd. (eastbound)
4. Get in right lane after Douglas St.
5. Enter gate\* for The Aerospace Corporation on right side street

\* **NOTE: Left turns into the Main Gate on El Segundo are prohibited from 3 to 6 p.m.**

## **USC Viterbi School of Engineering Second Annual Reichtin Keynote Lecture The Human Factor: Managing Technical Complexity and Creativity in the 21<sup>st</sup> Century Presented by Dr. Wanda M. Austin, President and CEO The Aerospace Corporation**

### **Particulars**

Thursday, September 25, 2008, 3:00-5:30 p.m.  
3:00 p.m.: Refreshments, Gerontology Courtyard  
4:00 p.m.: Presentation

USC Andrus Gerontology Auditorium  
**COST: FREE**

**Abstract:** Dr. Austin will open her address by celebrating Dr. Reichtin's legacy, saluting his accomplishments and reaffirming his relevance for current and aspiring systems engineers. She will then turn to one of the areas that most concerned Dr. Reichtin: attracting the best and brightest minds to the aerospace industry and helping them grow and develop into the finest systems engineers in the world.

As Dr. Reichtin once wrote, the aerospace business truly flourishes when it is populated by "creative individuals capable of understanding and resolving problems of almost overwhelming complexity." The human capital issue that Dr. Reichtin grappled with – making sure that the right people and processes were aligned – is more critical than ever today as aerospace companies attempt to build workforces that can meet the myriad challenges of the 21<sup>st</sup> century.

The lecture will next focus on the needs, attitudes, and world-view of Generation Y, the major supplier of tomorrow's systems engineers. As Dr. Austin will explain, Gen Y is – in many ways – the embodiment of Dr. Reichtin's thoughtful and authentic professional vision and values. Indeed, these young people have the imagination and integrity that are prerequisites for systems engineering innovation today. Moving to a more pragmatic plane, Dr. Austin will continue her talk by offering a five-point plan that's designed to help up-and-coming systems engineers get the knowledge, insights, and intelligence they need to take their place in the aerospace industry of the near-future. Without this learning, it will be difficult for new hires to eventually transition from specialties to domain-related areas like airborne systems integration, and then on to end-to-end systems engineering.

Dr. Austin will conclude by discussing Dr. Reichtin's love of space, as well as his respect for its power and potential. Like Dr. Reichtin, Dr. Austin believes that space gives all of us a much-needed sense of connectedness; it reinforces the fact that we are part of something larger than ourselves. And, as systems engineers, we have an obligation to help explore the skies responsibly and for the betterment of mankind.

**Directions:** Starting from the 110 (Harbor) Freeway, exit from the 110 at the Exposition Boulevard exit and go west to Vermont Avenue. Turn north (right) and go to Gate 6 (West 36<sup>th</sup> Place). Just say "Reichtin Lecture" at the gate and you will be allowed to park for free in the Parking Structure A, which will be on your right, next to Gate 6. The Andrus Gerontology Center is immediately south of the parking structure on McClintock Avenue. Parking elsewhere will cost \$8.00.

**A Report from the  
2008 International Symposium**  
*Article by: Sherry Pietras*

This year's symposium theme was "Systems Engineering for the Planet" and concerned the impact of engineered systems and products on the environment. Our host location was Utrecht, Netherlands inside the Jaarbeurs Conference Centre (Beatrix Building).

The Opening Keynote Speaker was Bert Klerk from ProRail, the Dutch railroad network, and he presented "Crossing Borders by Applying SE." His topic concerned providing intelligent and sustainable solutions to the ever-increasing demand for mobility and for translating the principles and methods of SE from traditional domains to the construction industry. ProRail has partnered with the Dutch Department for Roads, Public Works and Water Management and is currently constructing new lines and rail infrastructure. Our hosts encouraged everyone to step outside their realm of expertise and explore other SE venues (e.g., if you work in aerospace, take advantage of this opportunity to learn something about earth transport systems engineering).

Our first Plenary Speaker was Dr. Shun-Jie Ji from Taiwan, and he presented "The Future of Technology and Humanity, Exploring Vision and Action." In essence, technology is about helping people and meeting human wishes and needs. Therefore, we should pay more attention to social issues: human rights, security, multiculturalism, and sustainable development.

Our second Plenary Speaker was Ana Lorena Quiros from Costa Rica, and she presented "Using Life Cycle Thinking to Disseminate Life Cycle Management." Life cycle thinking is critical for worldwide sustainable development, so we must address social, economical, and environmental concerns with a holistic, science-based framework of thought that transcends business product management. She suggests promoting life cycle thinking through both formal and informal education, and via market-driven forces (e.g., volunteer work and policy making).

The Closing Keynote Speaker was Jean Botti from France, the Chief Technical Officer of the European Aeronautical Defense and Space Company. He presented "Aerospace and the Environment: Global Systems Innovation Challenge." The aerospace industry contributes immensely to the economic growth and welfare enjoyed today by the developed countries. However, in the last decade we have experienced growing concerns of global warming, environmental pollution, and the depletion of natural resources. Sustainable economic growth requires efficient air transport and the reconciliation of energy consumption with the mitigation of environment/ natural resources impacted. Proaction is a must to ensure compliance with evolving regulations (i.e., our future challenges).

There were 14 tutorials in all; the topics ranged from "Writing and Presenting Quality Conference Papers" to Scott Jackson's "System Resilience: Accident Avoidance and Survival and Recovery from Disruptions." Other familiar people were also encountered, such as Jim Martin (known for always having an extra presentation in his back pocket - just in case),

who presented on Architecture Concepts; Cecelia Haskins and Terry Fossnes, who took SE to the natural environment (their backwoods cabin); and Sarah Sheard, who presented on Complex systems.

The new Systems Engineering Praxis presented by Professor Philip M'Pherson captured the process, content, value, and measuring of the 'doing' of SE. He identified SE as Intellectual Capital and discussed the need to properly nurture and manage this asset. To ensure SE design and project management are high-value-adding processes, our programs must include the process of 'doing SE' at both organizational and practitioner levels.

The Academic Forum investigated how to shape SE for future roles in wider global issues, and in expanding current SE practices to include the consideration of resource management and social and ethical issues when appropriate. The range of topics included the future of the earth, land use, climate, urban water systems, earthquake disaster prevention, protection of scarce resources, and other grand challenges.

There were 3 Special Technical Topics: 1. "Water Management" - explored coping with water shortages and excesses (i.e., droughts and floods) and proper treatment of toxic wastes, with emphasis on flood prevention; 2. "High Tech Systems Embedded in their Environment" - explored how to improve our social and physical environment, and how SE deals with this embedding of high tech systems in their environment, with emphasis on maritime safety and security; and 3. "Transportation Infrastructure" - explored the Rail/Transit industry challenges of sustainability and resource efficiency, with emphasis on network-wide tradeoffs for energy efficiency.

The Rail/Transit Industry Round Table, organized by the Intelligent Transportation and Transit Systems WG, exchanged views on various mobility concepts.

A new SE concept called Engineering Systems was introduced, with focus on the interdisciplinary field of study involving technology management and the social sciences and how their collaborations impact university education and research.

Our grand banquet reception was held inside the Utrecht Railway Museum; we were served cocktails while exploring the rail cars on display, followed by folk dancers in traditional Dutch costume—yes, clogs. We wine and dined on excellent traditional cuisine, were entertained by wandering magicians, and engaged in lively conversations.

The Exhibit Hall social hour included a contest called Decoding the Matrix with some great gifts and giveaways. We were also invited to the Tool Vendor Challenge; 10 vendors were provided the opportunity to show-off their powerful tools against a common benchmark.

In keeping with the 'green' theme, our symposium hard copy material was kept to a minimum; for example, the SE Handbook version 3.1 is available electronically for free, but a hard copy will cost.

**2009 INCOSE International Symposium**  
will be hosted in Singapore.

—Draft paper submittals are due by November 3.  
Hope to see you all there!

## **July Speaker Meeting Recap: The Systems Engineering Factory**

*Presented by: Dr. Joel Sercel*

Dr. Joel Sercel spoke on “The Systems Engineering Factory: Examining Depth, Disruption, and Scope to Resolve the Paradox of Today’s Acquisition Failures”. Dr. Sercel is the Technical Director of Systems Engineering Training for California Institute of Technology, Industrial Relations Center, 383 South Hill Street, Pasadena, California <http://www.irc.caltech.edu/systemsengineeringcenter>.

Sercel defined D2S (Depth, Disruption and Scope) as a 3-axis model that can be used to evaluate any project or program. A project’s position in D2S space determines the fundamental values, process, management approaches, and corporate culture needed to ensure the most successful possible program execution. A cursory understanding of the D2S model can be had by considering what each of the individual scales in the model tells us. For example, the *Depth* scale relates to the extent of Discovery (uncharted territory) required to complete a program, and hence the degree to which erudition and respect for scientific peer review is needed.

Degree of *Disruption* of Key Ideas embedded in the project is an indicator of the extent to which the project execution team should be Risk Embracing or Risk Avoiding to maximize performance. Program *Scope* determines the extent to which formal Process Discipline, such as the systems engineering methods promulgated by INCOSE are needed for the project.

For very small, simple projects Sercel suggest that *ad hoc* processes are often most effective, while for very large programs such as many of today’s defense systems developments, formal process discipline and methods become keys to success.

What Doesn’t Work (For Large Programs)? Sercel noted the following practices in current use that are not often effective: ‘Armies of System Engineering Technical Assistants (SETAs)’ who are non-government employees brought in to conduct system engineering activities often independently; ‘Death by MURDER Board’ where a presentation or document is vetted by a committee until no one can find any objections; ‘Requirements By Telecon’, where candidate requirements are massaged one-by-one in a large group—often including representatives of multiple disciplines, some not necessary—until a consensus is achieved.

Sercel contrasted those practices with what he calls the Systems Engineering Factory. For large programs the SE factory consists of: Facilities, Tools, Teams, Processes, Procedures, Standard Products and Business Rhythms, designed to be compatible with the D2S characteristics of the project and based upon systems engineering best practices. Joel emphasized the ‘Business Rhythms’ define the synchronization of the processes used during the development. In SE Factory implementation, best practices include: Developing a complete document/product tree, *Designing* the required documents, Assigning the leaders, Estimating the effort required -- based on past experience (not wishful thinking), Writing needed

documents, and Measuring progress. In a sense, applying systems-engineering techniques to the activities of systems engineering, thus designing a system to do systems engineering.

**Presentation Evaluation:** Sercel’s talk was one of the most important discussions we have had at INCOSE-LA because it dealt with a major conflict within the systems engineering community.

On one side of the conflict is the large number of requirements that have to be allocated down through the several layers of the system architecture, analyzed through trade studies, validated, and verified among other tasks at each level. This need often leads to costly, time-consuming, and labor-intensive processes to coordinate the results. In practice, this can lead to cost overruns, schedule slips, and technical failures.

On the other side of the conflict is a product-oriented view that tends to disregard process and culture and therefore the lessons learned that have created modern systems engineering.

Sercel’s method, which he calls the SE Factory as briefly described above, is offered as a prescription for the resolution of the conflict on large programs. The SE Factory concept is a worthy hypothesis and deserves the validation and verification through actual practice on a wide range of projects. Sercel also made in clear in his presentation that “one size does not fit all in systems engineering” and that the systems engineering factory and INCOSE methods are not appropriate to all programs. For efforts with high scientific depth, or for small, informal projects, INCOSE methods must be tailored down to reflect the cultural needs of the effort. The D2S model provides a way to guide this tailoring and resolve the schism facing the systems engineering community today.

Sercel has indicated that his full tutorial expands upon the brief overview presented in the meeting. The INCOSE-LA chapter is checking into availability and pricing of having a D2S model and SE Factory tutorial in 2008. *Stay tuned.*

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JPL and Caltech provided the INCOSE-LA chapter with the capability to video record, videostream and webcast this meeting. The INCOSE-LA chapter profusely thanks JPL and Caltech for providing these services. The streaming video worked beautifully for the audience at the Aerospace remote site. The Boeing remote sites lost the video 1/3 of the way through the meeting and were not able to re-establish the video, but were able to continue with the audio webcast. Even with these difficulties Dr. Sercel’s presentation was as effectively delivered to the remote sites as at the face-to-face location.

The July 22 meeting served nearly 70 participants who were distributed across the following locations: JPL and our remote webcast receive sites at The Aerospace Corporation, Boeing Huntington Beach, Boeing Anaheim and the Antelope Valley College.

*Contributing authors: Shirley Tseng, Dr. Scott Jackson, Dr. Joel Sercel, Dick Emerson*

## November Tutorials at CalTech

November 18 and 19, 2008, 8:30 a.m. to 4:30 p.m.

Day 1: "An Introduction to the Object Management Group Systems Modeling Language (OMGSysML™)"

Day 2: "Object-Oriented Systems Engineering Method (OOSEM)"

**Target Audience:** Practicing systems engineers and others interested in applying the model-based approach to systems engineering.

**Cost:** Members: \$170, Non-members: \$200

Check next month's Newsletter and our INCOSE-LA website for further details

### November 18, 2008 Tutorial: "An Introduction to the OMG Systems Modeling Language (OMGSysML™)"

**Tutorial Objectives:** This introductory course should provide the student with an understanding of:

- Benefits of model-based approaches for systems engineering
- SysML diagrams and language concepts
- The role of SysML in a model-based SE process

**Tutorial Description:** The Object Management Group (OMG) Systems Modeling Language (OMG SysML™) is a general-purpose graphical modeling language for specifying, analyzing, designing, and verifying complex systems that may include hardware, software, information, personnel, procedures, and facilities. In particular, it provides graphical representations with a semantic foundation for modeling system requirements, behavior, structure, and constraints that support a broad range of engineering analysis. SysML represents a subset of UML 2.0 with extensions needed to satisfy the requirements of the UML™ for Systems Engineering RFP.

This tutorial provides an introduction to how SysML can address the needs of the systems engineer. It includes background and motivation, an overview of the SysML diagram types and language concepts, and selected sample problems to demonstrate how the language can be used as part of a typical SE process.

The SysML specification was developed in response to requirements by a diverse group of tool vendors, end users, academia, and government representatives with sponsorship from both INCOSE and the OMG. The OMG SysML™ Specification was adopted in May 2006. For more information, go to <http://www.omgsysml.org/>.

**Prerequisites:** Background in systems engineering. Exposure to UML helpful but not required.

### November 19, 2008 Tutorial: "Object-Oriented Systems Engineering Method (OOSEM)"

**Tutorial Objectives:** This introductory course would provide the student with an understanding of:

- An overview of OOSEM activities and modeling artifacts
- Some key modeling concepts that support system specification and design.

**Tutorial Description:** This tutorial will introduce an Object-Oriented Systems Engineering Method (OOSEM), which integrates a top-down systems approach with object-oriented concepts and modeling techniques. This method uses the extension to UML for systems engineering called the OMG Systems Modeling Language (OMGSysML™). OOSEM brings to Systems Engineering a technique for leveraging some of the expressiveness of SysML and the advantages of OO to help architect more flexible, extensible, and upgradeable systems with new, evolving technology. Another major goal of OOSEM is ease of integration with object-oriented methods for software engineering, and integration with hardware engineering and other disciplines. The tutorial will provide an overview of the model-based method for needs analysis, requirements analysis, logical design, physical design, and supporting activities.

**Prerequisites:** Background in systems engineering. Exposure to SysML.

The format for both days will be a lecture format with class discussion.



#### About Sanford Friedenthal, Principal Systems Engineer, Lockheed Martin

Sanford leads an effort to enable model-based systems development across Lockheed Martin in support of the Corporate Systems and Software Initiative. His experience includes the system life cycle from conceptual design, through development and production on a broad range of systems. He has been a systems engineering department manager, and a lead developer of advanced systems engineering processes and methods including the Lockheed Martin Integrated Enterprise Process and the OOSEM. Mr. Friedenthal also was a leader of the Industry Standards effort through the OMG and INCOSE to develop the Systems Modeling Language OMG SysML™ that was adopted by the OMG in 2006, and is co-author of "A Practical Guide to SysML".

**FREE Introductory 2-Day Course:  
Fundamentals of Systems Engineering**  
*Offered Under the  
Department of Labor/WIRED Initiative*

The course has been developed jointly by The Aerospace Corporation and California Polytechnic University San Luis Obispo and will be given on the beautiful Cal Poly SLO campus on September 9 and 10, 2008.

The course objectives are to:

- Improve awareness of SE relevancy to business goals and industry norms
- Improve understanding of SE practice, processes, and objectives
- Increase awareness of SE roles and responsibilities
- Identify targets for more in-depth learning opportunities

You will hear from educators and practitioners as they address a wide spectrum of systems engineering topics at various levels of breadth and depth, including:

- Introduction to Systems Engineering
- Project Management
- Risk Management
- Mission & Requirements Development
- Synthesis, Verification, and Testing
- Manufacturability, Reliability, Availability,

Maintainability

- Human Factors
- Decision Making / Trade Studies
- Interface Management / Configuration Management
- Design of Experiments
- Simulation and Optimization

There will also be panel discussions and a reception to meet providers of follow-on educational opportunities. The course is

open to degreed engineers who:

- Are currently employed
- Have a need to know more about systems engineering
- Have intentions of pursuing systems engineering training or education

Pre-registration is required. For more information and registration, contact :

Joel Shrater at 310.336.7755

OR

Michelle Bell at 310.336.2832

*Funding provided by Department of Labor,  
Employment & Training Administration: WIRED Initiative*

**INCOSE-LA Making a Difference:  
Community Service Day at the  
LA Regional Foodbank**

INCOSE-LA is in the process of arranging a Community Service Day for those who would like to give a bit of their time to help their communities. Tentatively set for 8:45 AM - 12:00 PM on Saturday, October 18, 2008, we are seeking volunteers who would like to join us for a morning of community service. At the Foodbank, volunteers help to sort donated goods and/or break down repackage large pallets of canned and packaged goods into “kits” that are redistributed to deserving beneficiaries within the Los Angeles area. INCOSE-LA members and families (minimum age 14) will have the opportunity to give a bit of their time to help their communities.

Interested parties should contact Elizabeth Deems at [Elizabeth.C.Deems@jpl.nasa.gov](mailto:Elizabeth.C.Deems@jpl.nasa.gov) or Eric Belle at [eric\\_c\\_belle@raytheon.com](mailto:eric_c_belle@raytheon.com) for more information. In order to allow the Foodbank sufficient time to make adequate staffing and logistics preparations, we are requesting that you RSVP at least one week prior to the event. Online registration via the INCOSE-LA website is in the process of being set up.

**The Board of Directors wishes to welcome the following new members in the Los Angeles Chapter of INCOSE:**

Note: The information listed below is 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](http://www.incose.org)) to update your information.

Name	Title	Company
Chelsea Dutenhoffer	Dawn Ground Data Systems Engineer	Jet Propulsion Laboratory
William Adelman	Systems Engineer Sr.	Lockheed Martin Aeronautics Co.
Roli Gostelow	Software Engineer	Jet Propulsion Laboratory
PJ Duke	Systems Engineer	Boeing
David Jeff Gooding	Sr. Project Engineer	Southern California Edison
James Wisenbaker	Systems Engineer	Boeing IDS
Thomas Brand	PLSSS Chief Systems Engineer	Lockheed Martin Mission Systems

**INCOSE-LA Chapter NEWSLETTER**

Vol. 6: Issue No. 7 September 2008

# INCOSE-LA Chapter NEWSLETTER

Vol. 6: Issue No. 7

September 2008

Return Address:

800 S. Pacific Coast Hwy. #8-205  
Redondo Beach, CA 90277

## 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:

### 2008 Board of Directors and Appointed Positions

#### Elected Officers

<b>President:</b>	John David Boyd	john.boyd@incose.org	or	president@incose-la.org
<b>Vice-President:</b>	Eric Belle	eric_c_belle@raytheon.com	or	vicepresident@incose-la.org
<b>Past President:</b>	James Manson III	james.manson@incose.org	or	pastpresident@incose-la.org
<b>Secretary:</b>	Beth O'Donnell	elizabeth.l.o'donnell@boeing.com	or	secretary@incose-la.org
<b>Treasurer:</b>	Marsha Weiskopf	marsha.weiskopf@aero.org	or	treasurer@incose-la.org

#### Elected At-Large Directors

<b>Membership:</b>	Paul Cudney	paul.cudney@incose.org	or	membership@incose-la.org
<b>Programs/Speakers:</b>	Jack Elson	jelson@nu.edu	or	programs@incose-la.org
<b>Tutorials/Education:</b>	Shirley Tseng	shirleytseng@earthlink.net	or	setraining@incose-la.org
<b>Ways and Means:</b>	Dana Pugh	dana.pugh@incose.org	or	waysandmeans@incose-la.org
<b>Communications:</b>	OPEN			

#### Appointed Positions

<b>Newsletter co-editors:</b>	Edie Ung, Jorg Largent	edie@raytheon.com	or	Palmdalejorg@aol.com
<b>Newsletter Production Manager:</b>	Communications Director			
<b>Reflector Manager:</b>	Susan Ruth	susan.c.ruth@aero.org		
<b>Industrial Relations Manager:</b>	Jose Garcia, Jr.	jose.s.garcia-jr@boeing.com		
<b>Technical Society Liaison:</b>	Edmund Conrow	info@risk-services.com		
<b>Chapter Recognition Manager:</b>	Michael Maar	michael.c.maar@boeing.com		
<b>Lead Site Coordinator:</b>	Anna Warner	anna.warner@boeing.com		
<b>Webcast Event Manager:</b>	Chris Delp	cldelp@jpl.nasa.gov		
<b>Website Content Manager:</b>	Communications Director			
<b>Website Technical Manager:</b>	Benjamin Luong	Benjamin.Q.Luong@boeing.com		
<b>CSER 2009 Miniconference Chair:</b>	Malina Hills	malina.m.hills@aero.org		
<b>Venue Chair:</b>	Denise Nelson	Denise.J.Nelson@boeing.com		
<b>Representative to San Fernando Valley Engineers' Council:</b>	Stephen Guine	Stephen.Guine@ngc.com		

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