Vol. 9, Issue No. 5 May 2011

NEWSLETTER

2002, 2004-10 2003

2008 President's Award for Most Outstanding Chapter

UPCOMING EVENTS

May Speaker Meeting

"The Critical Role Systems Engineering Plays in the Space and Missile Systems Center (SMC) 'Production' Era"

Speaker: Howard "Mitch" Mitchell, Associate General Manager, The Aerospace Corporation

When: Tuesday, May 10, 2011

Where: Booz Allen Hamilton — LAX Office
Building 5220 — 2nd. Floor, Suit 200
5220 Pacific Concourse Drive

See page 2 for more details

SAVE THE DATE

INCOSE International Symposium
June 20 — 23, 2011
Hyatt Regency Denver
650 15th. Street
Denver, Colorado

See article on page 6

Enterprise Engineering Bootcamp in Los Angeles

When: Tentatively the week of July 11, 2011

Look for details in a Reflector notice and future editions of the Newsletter

Inside This Edition

2010 Gold Circle Award!

The President of the Chapter, Elizabeth O'Donnell, received a letter from the INCOSE board announcing the awarding of the Gold Circle Award to the Los Angeles Chapter. The text of the letter is below:

> On behalf of the International Council on Systems Engineering (INCOSE), we are pleased to recognize the Los Angeles Chapter as a Gold Circle Award Chapter based upon its contributions and accomplishments in 2010. The Gold Circle Award recognizes chapters adopting best practices and reaching the highest goals and standards established by our organization.
>
> For many, chapters provide the primary day-to-day interface with INCOSE. Chapters organize technical and social programs, communicate key information about our organization and discipline, support technical activities, and enhance the member experience by facilitating an open, inviting environment where members receive valued products and services that enhance their careers. In fulfilling this mission, the Los Angeles Chapter leaders and members have committed significant time and energy to further the goals of our organization.
>
> To honor these efforts and achievements, this Gold Circle Award will be presented at the 2011 INCOSE International Symposium in Denver, CO USA. In doing so, INCOSE recognizes and celebrates the contributions and achievements of the Los Angeles Chapter, its leaders, and its sponsors.
>
> High quality, vibrant chapters are essential in INCOSE's drive to enrich, educate, and enlighten the INCOSE membership while improving recognition of INCOSE and the systems engineering profession. The Member Board and INCOSE extend heartfelt thanks and appreciation to the Los Angeles Chapter for its contributions towards attaining these goals.
>
> Congratulations,

The letter was signed by Member Board Chair Asmus Pandikow, Circle Award Review Chair Robert A. Levin, and Member Board Co-chair Eric Belle.

In the email in which she shared the news of this honor, President O'Donnell included the comment, "Congratulations to our 2010 President, Roz Lewis, and to all our board and chapter members! Job well done." The 2011 Board of Directors joins Beth in expressing congratulations and thanks to both the 2010 leadership and, more importantly, the members of the Los Angeles Chapter for their making it happen.

May Speaker Meeting

"The Critical Role Systems Engineering Plays in the Space and Missile Systems Center (SMC) 'Production' Era"

Presenter: Howard "Mitch" Mitchell, Associate General Manager, Program Assessments, the Office of the President, The Aerospace Corporation

PARTICULARS

When: Tuesday, 10 May 11, 5:30 — 8:00 p.m.
Where: Booz Allen Hamilton — LAX Office
Building 5220 — 2nd. Floor, Suit 200
5220 Pacific Concourse Drive (near LAX)
Remote sites will be available at the Control Point Corporation in Santa Barbara, JPL in Pasadena, the Boeing Company in Huntington Beach, and in the Antelope Valley
Cost: Members-*FREE*; Non-members-*$10.00*

Meeting Agenda:

5:30 - 6:20 p.m. Registration, networking, refreshments
6:20 - 6:30 p.m. Welcome and announcements
6:30 - 7:45 p.m. Presentation followed by questions and answers

Substantial refreshments will be provided at the host site. (Contact remote site contacts for more information regarding parking, refreshments, and other administrivia at their site locations.)

ABSTRACT: From the days of Acquisition Reform in the mid-1990s to today SMC has been in the "Development" era delivering new launch and satellite capabilities. While some programs are still in development, others are transitioning into the production phase. Although the systems engineering discipline and processes throughout the lifecycle of a program — from requirements analysis and validation to requirements certification — remain functionally the same, how Mission Assurance will be accomplished will change. The "Development" phase featured cost-plus contracts but the expectations for the "Production" phase is that fixed-price contracts will dominate. This change in contracting philosophy will require better systems engineering on the front end of the programs to ensure requirements, risks, materials, and processes (such as configuration management and interface control), are well understood. The purpose of this presentation is to engage in a dialogue about how systems engineering will support key national security space programs, thereby enabling them to meet the expectations that, in the "Production" phase, programs will meet cost, schedule, and performance targets while ensuring mission success.

BIOGRAPHY: Mr. Mitchell has served as a leader of military and intelligence community space programs, having served in several leadership positions within the Air Force Systems Command, Aeronautical Systems Center, Ballistic Missile Office Space and Missile Systems Center, the National Reconnaissance Office, Office of the Secretary of Defense, Air Force Space Command, and CENTCOM.

In his current role, Mr. Mitchell leads independent program assessments in support of the Milestone Decision Authority on all ACAT I and II space programs and maintains the PEO Space Watchlist (which identifies and tracks technical issues on programs and ensures that issues that span multiple programs are addressed). While at Booz Allen Hamilton in the Washington, D.C. area, Mr. Mitchell led business development, contracts, and business strategy for the National Reconnaissance Office's Communications and Office of Space Launch directorates, and worked as a program manager for the launch and test range systems engineering and integration contract in support of the AF/SMC Spacelift Range Group.

Mr. Mitchell has filled senior leadership positions at NYTOR, Inc. and Arrowhead Global Solutions, and has served in the United States Air Force from 1973-2003, retiring as a Major General.

Mr. Mitchell's academic background includes a B.S. in Mechanical Engineering, from the United States Air Force Academy, an M.A. in National Security Strategies from the Naval War College, an M.A. in International Relations from Salve Regina College, an M.B.A. from the University of North Dakota and an M.S. in Mechanical Engineering from the University of Michigan.

R.S.V.P.:

ALL PARTICIPANTS: Please register online at http://www.incose-la.org. You will be asked to provide your full name, title, company, phone number, and email address. State whether you are a US Citizen, resident alien, or foreign national, and members must include your INCOSE member number. Please indicate the site at which you will be attending. Site dependent requirements are listed below.

Booz Allen Hamilton (the host site): Attendees must R.S.V.P. by Friday, May 6, 2011. Please bring your picture identification (driver's license, passport or green card) to the meeting.

Directions to the host site:

From the San Diego (405) Freeway: Exit at El Segundo Boulevard. Go west on El Segundo Boulevard and then turn right (North) on to South La Cienega Boulevard. Proceed on La Cienega until the third stoplight and then turn left onto Pacific Concourse Drive. Follow the road until you reach the second stop sign (immediately past court house parking garage on the right) and turn right. At the gate on the far right, press the green button to receive a parking ticket (Admin staff will validate parking). After passing the gate, turn left into the visitor parking lot. Walk past the water fountain, across the rotunda to Building 5220. We are located on the 2nd floor, Suite 200.

From the airport (LAX) area: Go east to La Cienega Boulevard and turn right (south). Proceed south across Imperial Boulevard, under and beyond the 405-105 interchange. Pacific Concourse Drive will be on the right just beyond the National University facility. Follow the directions above.

(Continued on page 8)

Systems Engineering is Simple

By Gina Kostelecky and Jorg Largent

At the 2010 INCOSE International Workshop, a group of systems engineers discussed a concept: the systems engineering process is simple. A corollary to the concept would be the argument that complexity is borne of the nature of a project rather than of the systems engineering process itself.

The concept that the systems engineering process is simple is difficult to prove directly. The proof consists of two elements: an indirect or inductive argument and an argument of necessity, both buttressed by anecdotal and experiential data.

Oddly, the INCOSE handbook does not explicitly cite "keep it simple" as an attribute of the process, however a search for the word "simple" in the handbook finds several inferences that the process should be simple. The concept of simplicity as an attribute of the systems engineering process was once taught in an INCOSE-developed curriculum (Caltech, 1995).

The INCOSE handbook does address tailoring and from the discussions of tailoring the importance of the systems engineering process being "simple" can be further inferred from the discussions on tailoring as to why it is imperative that the application of the systems engineering process be simple.

The preface of the handbook notes, "Thoughtful tailoring and intelligent application of the SE process described in this handbook is essential…." Chapter 8 of the handbook is a "how to" discussion of tailoring, but does not elaborate on the "why," beyond the quote from the Preface. Figure 8-1 illustrates an optimum degree of tailoring as a relative minimum of project/ program cost, and illustrates that costs increase beyond that optimum as a function of an increasing degree of formal systems engineering process used. Figure 8-1, while easily and immediately understood, has no units of measure for "degree of formal systems engineering." Regardless, the chart illustrates that while a little bit of systems engineering can be a good thing, the oft-used rationale that if a little bit is a good thing then a lot more is a better thing, therefore one should make it – the systems engineering process in this discussion – more voluminous and more complex. The opposite is the case; there can be too much of a good thing, even systems engineering.

Chapter 8 of the handbook includes a section "Common approaches and tips." The tips include examples of improper reasoning; reasoning that can result in an unnecessarily complex application of the systems engineering process. Section 8.1.2.3, "Traps in Tailoring," cites, as one trap, "Using all processes and activities 'just to be safe….'" This is the antithesis of simplicity (therefore simplicity is an essential attribute of the process) and can be detrimental. Section 8.1.2.3 further notes, "The trap is that the each process carries an overhead cost. If this approach [using all process and activities] is taken, the quality of the system may actually degrade because of application of an inappropriate process."

Given a typical project with a project manager — a project manager who doubts or is unsure of the value of "systems engineering" (a circumstance many systems engineering professionals feel is the case) — the challenge is to convince this hypothetical project manager that it is advantageous to the project to take full advantage of the perhaps-alien-seeming "systems engineering" that is perceived, in some quarters, as some sort of additional bureaucracy.

From the perspective of the hypothetical project manager, anything that adds labor, bureaucracy and complexity to a project without a positive return on investment is not value added. Systems engineering adds value to the execution of a project if and only if it facilitates meeting schedule, if and only if it facilitates staying within budget, and if and only if it ensures the performance of the product.

In addition to the hypothetical, there are experiential examples, and one can be found in the tools available to manage requirements. It should be noted that the attributes of a requirement are the same, regardless of the complexity of a project and regardless of how many requirements maybe needed to constitute a necessary and sufficient set of requirements. Requirements management ensures that all the requirements of a project are properly addressed, none are overlooked, and that requirements creep does not occur. However, a massive, overly powerful, and labor-intensive software tool that is sufficiently complex so as to accommodate the most complex of projects is counterproductive for a project in which a simple spreadsheet would be adequate. A corollary would be the acquisition of a tool without following the systems engineering process; purchasing a tool without first determining the requirements the tool must satisfy.

The systems engineering process is, or should be, simple, and becomes "complex" only to the degree necessary to match the complexity of a project. The challenge facing the veteran systems engineering advocate is to take something that is intuitively obvious and communicate it to those who do not have the experience and understanding of the systems engineering process that make the need for the process and the need for simplicity "intuitively obvious."

INCOSE-LA Gives a Helping Hand

By Jorg Largent

One of the biggest challenges of a large organization such as INCOSE is managing the membership database. The INCOSE-LA Membership Chairman, Paul Cudney, volunteered several hours over the last few months helping organize the membership database for INCOSE.

For several years Paul has generated membership graphs showing yearly INCOSE, regional, and chapter membership counts. He also provides annual counts of joined and lapsed members to support decisions by the INCOSE Board of Directors. Paul updates our Los Angeles Chapter membership data about twice a month, and generates the list of new members found in every Chapter Newsletter and at every Chapter Meeting. As a side benefit from these activities, Paul identifies member records that are internally inconsistent and assists INCOSE headquarters in resolving the member's information.

Following the 2011 Conference on Systems Engineering Research, Paul organized a Chapter team to test the new INCOSE membership records system.

Thank you, Paul, for your dedication and efforts. You have represented the Chapter well and have helped the INCOSE organization.

Reports and Notes from the 2011 Conference on Systems Engineering Research

Inputs from Elizabeth O'Donnell, President, INCOSE-LA, the staff, and Terry Rector, CSER 2011 Management Chair

A SUMMARY

The 9th annual Conference on Systems Engineering Research (CSER 2011) was held at the Crowne Plaza Hotel in Redondo Beach, April 14-16, 2011. The conference began Thursday afternoon, with a reception for SEANET participants and CSER registrants, and concluded on Saturday afternoon. The conference was an international event, sponsored by the University of Southern California (USC) in collaboration with Stevens Institute of Technology, and managed by the Los Angeles chapter of the International Conference on Systems Engineering (INCOSE). The conference team successfully brought together almost 200 attendees, including practitioners and researchers from academia, industry and government, to present and discuss systems engineering topics and to influence and provide access to forward-looking systems engineering research.

The conference included 94 paper presentations in six tracks over two days, banquet and plenary speakers, and a leadership panel. Opening remarks were made on Friday morning by Terry Rector, Conference Management Chair, and Azad Madni, Conference General Co-Chair and Professor of the Epstein School of Industrial and Systems Engineering at USC. Presentations, with discussion, followed, by distinguished plenary speakers including Yannis Yortsos (Dean, Viterbi School of Engineering, USC), Michael Ryschkewitsch (NASA Chief Engineer), Dinesh Verma (Dean, School of Systems and Enterprises, Stevens Institute of Technology), Azad Madni, Barry Boehm (Professor, Computer Science, USC), Donna Rhodes (Senior Lecturer and Principal Research Scientist, MIT, and honorary CSER 2011 Chair George Friedman (Professor, Epstein School of Industrial and System Engineering, USC). In addition, an interesting and informative video interview of Dr. Ron Sugar, Northrop Grumman CEO Emeritus by Dr. Azad Madni was presented.

A conference banquet was held on Friday evening, which included remarks by keynote speaker Stephen P. Welby, Deputy Assistant Secretary of Defense (Systems Engineering). Mr. Welby's presentation focused on the Department of Defense (DoD) Engineering Enterprise, and three key Systems Engineering challenges - Managing Complexity, Managing Risk, and Growing Future Engineering Leaders. He also addressed what he sees as opportunities for impacting or re-shaping the profession of Systems Engineering - including development of better tools (the "builder is defined by the tools he brings to the job"); new approaches to engineering education, where he spoke about bringing greater SE content to an engineering educational background and the efforts of the DoD to bring real world, challenging problems to students; and growing an engineering culture, stressing that a focus should be on sustaining innovation for the future to solve and embrace global challenges.

The conference concluded with a leadership panel facilitated by INCOSE Fellow Elliot Axelband. The panel participants were John Thomas, Senior Vice-president, Booz Allen Hamilton and INCOSE President–Elect, Stephen O'Neill, President Boeing Satellite Systems International, and Vice President of Commercial Satellite Systems for Space and Intelligence Systems, Christopher Cool, Sector Vice President; Quality, Safety & Mission Assurance, Northrop Grumman Aerospace Systems and Bob Neches, Office of the Assistant Secretary of Defense for Research and Engineering, Engineered Resilient Systems S&T Priority Council Lead.

Closing remarks were provided by Azad Madni, Terry Rector, and Beth O'Donnell, on behalf of the CSER Technical and Management teams and INCOSE-LA, thanking the attendees and speakers for their participation and recognizing the contributions of the sponsors, volunteers, and committee members, who helped make the conference a success.

NOTES FROM THE FLOOR

The presentations covered the systems engineering process from a wide range of perspectives. One presentation ("Managing Uncertainty in Dating and Other Complex Systems") drew a parallel between dating and the systems engineering process. The presenter, Mr. White, used dating and marriage to illustrate the importance of trust, which, he noted, is also important in the relationship a project has with its suppliers. During the panel session later that afternoon the importance of trust was echoed by Mr. Neches, who, during the panel discussions, introduced "trustability" as an attribute.

Individual discussions with the participants illustrated the breadth and depth of the conference. A graduate student, with a dual background in chemical engineering and systems engineering, found the conference informative and educational. She particularly enjoyed the banquet speaker on Friday night. She has discerned some of the challenges faced by the systems engineering advocate: some people do not understand the process or the value of the process, thinking that they already do it – systems engineering – as a part of the traditional activities that were the processes used by their particular discipline. She deftly hypothesized a challenge in response: why do they (the veteran discipline engineers) do what they do and, then, is there a better way (i.e. the systems engineering process), thereby using this type of discussion as a means to advocate the systems engineering process.

Lunch-table discussions echoed similar themes; one such discussion speculated on the virtues of model based systems engineering and other tools. One "tool" discussed was the AP233 standard (systems engineering portal), with the thought that the tools would improve the execution of the process and resolve a generational challenge. The individual who expressed the "generational challenge" concern contended that some

(Continued on page 5)

veteran engineers regard systems engineering as a bureaucracy that would get in the way of doing their jobs. Examples were cited to buttress the concern; examples such as the systems engineering "products" (i.e. a Systems Engineering Management Plan) that can be products unto themselves rather than tools to facilitate the execution of the project.

John Thomas, Senior Vice-president, Booz Allen Hamilton and INCOSE President–Elect, discussed the role of the systems engineer from a proactive perspective [for more insight into Mr. Thomas' perspective, visit the INCOSE-LA website and review his presentation from the February, 2011 speaker meeting, http://www.incose-la.org/events/speaker-meetings/]. John stated that the systems engineer should be a part of the leadership of a project – a peer. He challenged the systems engineers with a question: how can the systems engineer help implement the vision in a manner so that it is motivating and so that it is understood. John also proposed a simple metric for leadership: if you [the systems engineer] have no involvement, you are not leading.

Mr. Thomas concluded with the suggestion, particularly for the academia-oriented members of the audience, that there are two areas of research to which they should be open.

"First, a more effective integration of the socio-technical models that would allow a systems engineer to view the problem way beyond only the technical context. While we can say that that is a need, I would assert to you that our engineering schools are failing to broaden, as measured by the behavior of our systems engineers, our mechanical engineers, our electrical engineers, the notion that the problem is bigger than the technology…. So, there is a value shift that we have an opportunity to start, right in these universities, and evolving."

"Secondly, we need to place a huge addition emphasis on environments that our engineers can be immersed in, environments that will effectively accelerate the application of the wisdom in the real world. The application of systems thinking that influences direction, the application of associative thinking; critically, the application of those leadership skills under something that will feel real-world, that can generate the scar tissue, as Steve Wellby would say, that will evolve that wisdom."

Christopher Cool, Sector Vice President; Quality, Safety & Mission Assurance, Northrop Grumman Aerospace Systems, discussed the application of systems engineering from his perspective (as an executive), raising questions as to how best a manager might better utilized the systems engineering process. During the question and answer period a question was asked about combining some of the points made that the owners of the management and build domains should include the systems engineer as a peer vice what would be a good metric to measure management's effective utilization of the systems engineers in the organization? The panel responded with an engaging and educational discourse on the subject.

CREDITS

The CSER 2011 committee would like to thank our generous sponsors and exhibitors. It is through the support of our sponsors and exhibitors that we were able to successfully present this conference.

The Sponsors:

- The Aerospace Corporation - Gold Sponsor
- Microcosm, Inc. - Bronze Sponsor
- Loyola Marymount University (LMU) - helped to sponsor the Friday evening reception

Exhibitors:

- Project Performance International (PPI) - who also provided the kangaroo pins from Australia, a conversation item for attendees.
- Microcosm, Inc.

Additional thanks are offered to Microcosm, Inc., who provided door prizes which were awarded to several lucky conference attendees at various times during the conference. We are proud to announce the following Microcosm winners:

1. Adam Dershowitz (Sr. Engineer, Exponent Failure Analysis Associates), won a book (up to $50 value) given away at Friday's Reception.
2. Rob Pitsko, from Mitre, won a $100 gift certificate, given away Friday night during the banquet
3. Susan Jones from Aerospace Corp, won a Book (up to $50 value), given away during Saturday's lunch

From Terry Rector, Conference Management Chair:

The first thing we need to say is Thank-you! We want to pass on our heartfelt thanks to all the committee members, Management and Technical; to the volunteers, and to the hotel. The comments about the amenities and, particularly the program, have been especially gratifying and carry with them a special note of thanks for the Technical Committee, which provided an agenda of distinguished speakers and relevant presentations: Azad Madni, Elliot Axelband, Marilee Wheaton, and Roger Ghanem. After all, it's the program that draws our interest.

Next I personally want to thank the INCOSE-LA Board of Directors for their selection of me as the Conference Management Chair and for the trust they placed in me to get this highly visible and very important conference to our chapter. I believe it was accomplished with the professionalism warranted by our membership.

Last, I want to thank the committee members — each and every one has become part of my extended family and will continue to be as we move on to future events and activities.

With regards to the conference management committee: we did it! A team effort by far, success would not have been possible without each of the following people: Beth O'Donnell, Susan Ruth, Roz Lewis, Harvey Soldan, Paul Cudney, David Boyd, Jose Garcia, Edie Ung, and Marilee Wheaton. In addition to our committee, we had an army of volunteers, including: Jeff Lankford, Mick Connolly, Mark Gallo, Katy Wong, TaShanna LaBorde, Sandra Guerra, Shirley Tseng, Scott Birtalan, Deanna Regalbuto, Neil Lennertz, and Federico de los Santos. I ask the chapter to thank this team as without them CSER 2011 would not have been as successful.

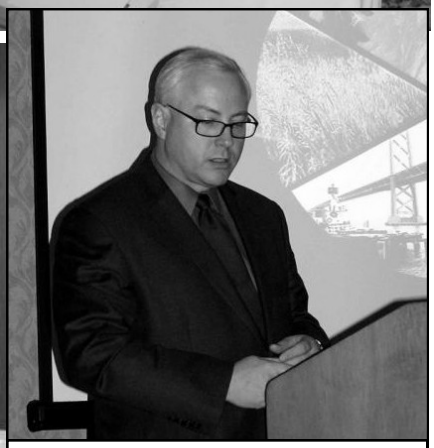
In closing, I want to challenge everyone to think about the next opportunities to volunteer. These are great opportunities to learn as much as you teach; I sure know I learned a great deal from everyone. Thank-you all for your support, advice, instruction and camaraderie.

Photographs from the 2011 Conference on Systems Engineering Research

Inputs from Elizabeth O'Donnell, President, INCOSE-LA, Rosalind Lewis, Past President 2010, and Eric Belle, Past President, 2009

Paul Cudney, David Boyd, and the registration team at work.
President Beth O'Donnell, below

The Opening Plenary



Stephen P. Welby, Banquet Speaker

Photographs from the 2011 Conference on Systems Engineering Research

Inputs from Elizabeth O'Donnell, President, INCOSE-LA, Rosalind Lewis, Past President 2010, and Eric Belle, Past President, 2009

The Leadership Panel

Microcosm prize winners

CSER Technical Program Highlights

Roger Ghanem, USC and Marilee Wheaton, The Aerospace Corporation, were the technical program co-chairs and noted that almost 100 papers in 24 sessions were presented in the technical program. The conference had several new additions of track themes such as Healthcare and Medical Informatics, and Homeland Security. The presentations highlighted the breadth of systems engineering research across academia, government and industry.

As the co-chairs, Roger and Marilee expressed their sincere thanks to all of the session chairs who contributed, -- a sentiment shared by the organizers and hosts of the conference. The session chairs, listed below, were selected because they and their organizations represent the leading edge of systems engineering research.

Applied Systems Thinking	Roger Ghanem, USC
Healthcare and Medical Informatics	Azad Madni and Maryann Hiller, University of Southern California, Viterbi School of Engineering
Homeland Security,	Jim Hines, USC
Model Based Systems Engineering-I	Regina Griego, Sandia Lab
Model Based Systems Engineering-II	Dustin Jepperson, SBIRS Program Office
Systems & Enterprise Architecture-I	Jon Wade, Stevens Institute of Technology
Systems & Enterprise Architecture-II	Colin Neill, Penn State
Systems & Enterprise Architecture-III	Susan Ferreira, UT Arlington
System Assessment & Assurance	Jennifer Bayuk, Stevens Institute of Technology
System Development, Design and Acquisition-I	Jian Guo, Delft University of Technology
System Development, Design and Acquisition-II	Moti Frank, Holon Institute of Technology, Israel
System Development, Design and Acquisition-III	Susan Jones, The Aerospace Corporation
System Development, Design and Acquisition-IV	Yvette Rodriguez, DAU
Systems Engineering Management-I	Elliot Axelband, RAND Corp and Indrajeet Dixit, University of Southern California, Viterbi School of Engineering
Systems Engineering Methodologies and Process	Larry Earnest, Northrop Grumman Corp
Systems Engineering Methodologies and Process	Cecilia Haskins, Norwegian U. of S&T
Complex Systems and System of Systems	Thomas McKendree, Raytheon Company
Value Engineering-I	Barry Boehm and Jo Ann Lane, University of Southern California, Viterbi School of Engineering
Value Engineering-II	Ricardo Valerdi, MIT
Model Applications and Approaches-I	Gerrit Muller, Buskerud University College
Model Applications and Approaches-II	Paulette Acheson, and Cihan Dagli, Missouri University of Science and Technology
Systems Engineering Education-I	Jim Hines, USC
Systems Engineering Education-II	Nicole Hutchison, Stevens Institute of Technology

(Continued from page 2)

May Speaker Meeting Remote Sites:

Remote site contacts will provide information on how to get to their respective sites.

Pasadena JPL: R.S.V.P. one day prior to the meeting.

Site contact: Chelsea Dutenhoffer, email: chelsea.dutenhoffer@jpl.nasa.gov

Antelope Valley/Palmdale: Open to all.

Site contact: Mike Wallace, phone: 661-540-0290, email: m.wallace@ngc.com

Boeing Huntington Beach: Building 17, Conference Room 109, 14900 Bolsa Chica Road, Huntington Beach. Open to U.S. citizens and resident aliens. Foreign Nationals will not be able to attend at this site. Refreshments will be provided.

Site contact: Beth O'Donnell, phone: 714-372-2543, email: elizabeth.l.o'donnell@boeing.com

Santa Barbara, Control Point Corporation:

Site contact: Scott Grant, email: scott.grant@control-pt.com

Stay Connected

Get the latest on INCOSE-LA happenings in the Reflector e-mails

If you wish to be placed on our e-mail distribution,

contact Susan Ruth

susan.c.ruth@aero.org

The 21st Annual International Symposium

INCOSE's 21st Annual International Symposium will be held in Denver, Colorado on June 20 — 23, 2011. The symposium, the largest systems engineering event in 2011, will give the systems engineer an opportunity to continue her or his professional development by being on the cutting edge of systems engineering technology. There are 35 paper sessions with 96 papers (including invited papers from System of Systems experts and IEEE colleagues), six panels debating various unresolved issues, 16 practical tutorials and four leading keynote speakers, and so much more. During the symposium attendees will have opportunities to:

- Interact one-on-one with leading practitioners, researchers and educators
- Attend paper presentations
- Participate in panels
- Attend competence-building tutorials
- Get involved with Working Groups
- Stay current on "Best Practices"
- Learn about Certification
- Network with colleagues and make new connections
- Receive Proceedings and conference bag.

Additional opportunities include twelve poster presentations, up to 38 INCOSE working group meetings, an academic forum, and the Youth Engineering Education Outreach Program.

A special attraction for members of the Los Angeles Chapter has been a social gathering. The Chapter has hosted "networking events" at both symposia and workshops; events that have proven attractive to colleagues from other chapters.

The symposium will be followed by (on June 24) an opportunity to tour the Laboratory for Atmospheric and Space Physics and to tour the National Renewable Energy Lab.

To learn more about the accommodations available at the host hotel, the Hyatt House Denver, go to the INCOSE website: https://www.incose.org/symp2011

To learn more about the symposium go to the INCOSE website: https://www.incose.org/symp2011. The "early registration date" cut off is May 8, 2011.

Lockheed Martin to Leverage INCOSE's Systems Engineering Certifications Starting in 2011

By Lockheed Martin, dateline 22 February 2011, Bethesda, Maryland

Lockheed Martin, an advanced technology global security company, and the International Council on Systems Engineering (INCOSE), the world's leading authority on systems engineering, have signed an agreement that will lead to additional INCOSE professional certifications for appropriately qualified Lockheed Martin systems engineers. The three-year agreement will help Lockheed Martin engineers pursue INCOSE certifications, which serve as an important recognition of a systems engineer's professional development.

"Lockheed Martin engineers drive innovation in our Corporation," said Dr. Ray O Johnson, senior vice president and chief technology officer at Lockheed Martin. "As technology becomes more complex, systems engineering is increasingly important in the development of relevant, affordable solutions for our customers. This agreement with INCOSE complements our technical workforce development initiatives, and it provides an independent and consistent assessment of our systems engineering community."

"INCOSE looks forward to working with Lockheed Martin to build upon INCOSE's Certified Systems Engineering Professional (CSEP) designation as the worldwide reference for systems engineering professionalism. As a member of our Corporate Advisory Board for many years, Lockheed Martin has been a strong supporter of INCOSE and its technical activities. This agreement furthers our on-going collaboration," INCOSE president Samantha Brown said.

INCOSE's Certification Program is comprised of three levels: Associate Systems Engineering Professional (ASEP), a Certified Systems Engineering Professional (CSEP), and Expert Systems Engineering Professional (ESEP). These multiple levels of certification align with a typical career progression. INCOSE certification is well-regarded and valued by Lockheed Martin customers.

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) to update your information.

Name	Title	Company
Luis F Aguilera	Systems Engineer	Self-employed
Rudy Rusali	IPT Lead	Eaton Aerospace
Michael J Lopez	Senior Associate	Booz Allen Hamilton
Karla Lima	Instrumentation Harness Systems Engineer - Co Op	Pratt & Whitney Rocketdyne Inc.
Dave Van Gogh	Systems Engineer	Newport Corporation

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. . Our mission is to advance the state of the art and practice of systems engineering in industry, academia, and government by promoting interdisciplinary, scalable approaches to produce technologically appropriate solutions that meet societal needs.
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:

2011 Board of Directors and Appointed Positions

Elected Officers				
President:	Beth O'Donnell	elizabeth.l.o'donnell@boeing.com	or	president@incose-la.org
Vice-President:	John Silvas	silvas_john@bah.com	or	vicepresident@incose-la.org
Past President:	Rosalind Lewis	rosalind.lewis@aero.org	or	pastpresident@incose-la.org
Secretary:	Alan Kirschbaum	aik@roadrunner.com	or	secretary@incose-la.org
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