The Enchanted View
— Thinking About Systems —

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www.incose.org/enchantment

Meet The 2012 Officers

Woody Weed, President—Woody is embarking on his twenty third year at Sandia National Laboratories. Prior to Sandia, he spent seven years at Lawrence Livermore National Laboratory and a few years in industry at Spectra Physics and Coherent Radiation. He is currently a systems project engineer working risk management on a multibillion dollar, multiyear, advanced technology system development project. Recently, he spent eight years in Sandia's pulsed power laboratory fusion program engineering the refurbishment of the Z Machine and integrating a program to advance a novel fusion approach. The previous decade he engineered the high vacuum pumping systems for the National Ignition Facility, another laboratory nuclear fusion system and the world's largest laser. His early work experiences included developing x-ray diagnostics for underground nuclear tests and manufacturing argon ion lasers. He has been a member of the American Vacuum Society for almost thirty years and has served as a division and short course committee chair. He is a certified Project Management Professional and hopes to find the time to earn the CSEP.

Vision for the Chapter: Building upon the strengths of the Chapter and shoring up some of our weaknesses will be the focus of my efforts in 2012. Our monthly meeting, held on the second Wednesday at ATA in Albuquerque, continues to be the flagship Chapter activity. Your Board sometimes struggles to secure an engaging speaker each month and we appreciate your timely recommendations. We have eleven of these talks per year (we take December off to accommodate the Holiday social). This past year saw an increase in our use of Live Meeting by presenters. Live Meeting expands the pool of presenters by allowing anyone in the world to present. I want us to increase our proficiency with this tool and improve the quality of these remotely originated talks. In addition, we will explore its recording functionality so you will be able to experience the presentations at a time of your choosing. It is important to the vibrancy of the Chapter that we minimize the impact of our large geographical distribution on the effectiveness of our technical meetings and exchanges. We will also attempt to increase the number of presentations on systems engineering tools, e.g. risk management software. Additionally, the Board of Directors will review and revise the Chapter Bylaws this year. A number of sections are dated and need to be refreshed with an eye to the future. Please feel free to contact me anytime with your thoughts, concerns and suggestions. I value your membership and its support of INCOSE's growth. ∞

Ricardo Pineda, Vice President & President Elect—Dr. Ricardo L. Pineda holds Ph.D. and M.Sc. degrees from Lehigh University and a B.Sc. degree from Universidad Nacional de Colombia. He is currently the AT&T Distinguished Professor in the College of Engineering, Chair of the Industrial, Manufacturing and Systems Engineering department and the Director of the Research Institute for Manufacturing and Engineering Systems (RIMES) at the University of Texas at El Paso. His background includes recognition as Distinguished Member of the Technical Staff (DMTS) at Bell Labs, and CTO at AT&T in Mexico. His research interests include service systems engineering, network centric systems, application of Architectural Frameworks to SOS, complex systems development management, renewable energy systems, and energy systems security. He is a member of INCOSE, IEEE, IIE, ASEE, ISACA and an Executive Board member for TMAC. ∞

Heather Kraemer, Secretary—Heather R. Kraemer received her Bachelor of Science in 2003 and Master of Business Administration in Management of Technology in 2006 from the University of New Mexico. She received her Master of Engineering in Systems Engineering from Stevens Institute of Technology in 2010, with her Masters Project focusing on justifications and methodologies for collecting and integrating multi-viewpoint solution patterns as elements of enterprise solution architectures. Heather has experience in Production and Materials Planning, Program Engineering, Process Engineering, Systems Analysis, Portfolio and Project Management, and received her Project Management Professional (PMP) certification in 2010. ∞

Mary Compton, Treasurer—Mary has worked at Sandia National Laboratories (SNL) since 1990. She has a BS in Biology, a Masters in Library Science, a Masters in Education in Science Education, and an MS in Software Engineering with a specialization in Software Systems Engineering. Mary worked as a librarian for 20 years, half spent working in the Technical Library at SNL. In 2001 she transferred to the Science and Engineering Information Systems group where she worked as a systems analyst; she wrote requirements for applications that support nuclear weapons work for the NNSA (the Master Nuclear Schedule and the Weapons Information System) and SNL (the Record of Assembly and the Need-to-Know Engine.) In October 2010 Mary became a systems engineer in one of the firing set groups at SNL. Mary has served as the Enchantment Chapter Secretary since 2008. ∞

IW12 INCOSE International Workshop in Jacksonville—21-24 Jan

You won't find this conference-badge-insert of working group sessions on the INCOSE web site, so you might want to print and cut a copy to take with you if you are going. For updates to this 27 December schedule go to the INCOSE IW12 site.

If you haven't decided yet, here's some things to think about ...

Unlike INCOSE's annual International Symposium and other conferences, there are no paper, panel or tutorial presentations. Instead, attendees spend 4 days working alongside fellow systems engineers. Systems Engineers at all levels and from all backgrounds are encouraged to engage in working sessions, and contribute their knowledge and experience to take the discipline forward.

Working group meetings at IW represent about half of the meetings that occur. The other half called "core" are associated with INCOSE committee, administration, forward planning, and networking activities. These include plenary sessions, technical operations planning, International Symposium planning with paper/panel/tutorial selections, regional meetings offering collaborating with neighboring chapters, and of course social networking events. Some of these core sessions are closed for designated committee members only, but most are open.

If you haven't attended any working group (WG) meetings at one of the INCOSE International Workshops, you should feel comfortable in doing so. They are generally informal gatherings of people interested in talking and hearing about the WG area of interest. Working group activity varies, with mixtures of round-the-room discussion, presentations, break-out workshop sessions, activity and project planning, project work, project updates, symposia on scheduled topics, and more.

Open sessions are the norm, and everyone is welcome to come and participate or simply lurk, whether officially a member of the working group or not. An excellent opportunity to learn what the WG does and decide if you want to join the group. Some WG's, like Biomedical, have closed sessions as well, so if you are a member of a WG you might find additional sessions in the full listing.

For links to Working Group activity pages visit: www.incose.org/about/organization/ti.aspx

Open WG Meetings	**Sat 21 Jan**	**Sun 22 Jan**	**Mon 23 Jan**	**Tue 24 Jan**
Affordability		13:00-17:00	13:00-17:00	
Anti-Terrorism International				09:00-14:30
Autonomous Systems T&E		**08:00-17:00**		
Biomedical		15:00-17:00	09:00-11:00	
Competency			08:00-15:00	08:00-14:30
Human Systems Integration	10:30-16:30	08:30-16:30	08:30-16:30	08:30-14:30
In-Service Systems	10:30-17:00		08:00-15:00	
Knowledge Management			08:00-12:00	08:00-12:00
Lean Enablers for Prog Mgt		08:00-17:00		
Lean Systems Engineering			09:00-12:00	
Motor Sports			09:00-17:00	
Power & Energy Systems	13:30-16:00	11:00-15:30	11:00-16:00	
Reliability Engineering	10:30-17:00	08:99-17:00	08:00-10:00	
Risk Management		13:00-17:00	13:00-15:00	
Space Systems			08:00-12:00	
System Security Eng'eering			**08:00-17:00**	
Systems of Systems			10:30-12:00	10:30-12:00
Systems Science	10:30-17:00	08:00-17:00	08:00-17:00	08:00-14:30
Tool Integration & Interop			08:30-17:00	
Transportation		14:00-17:00	10:00-13:00	
Very Small & Micro Entities	10:30-17:00	12:00-17:00		
Open Workshops				
Model Based SE	10:30-17:15	08:15-17:30		

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Autonomous System T&E WG 22Jan—Review of 10 *Systems of the 3rd Kind* Essays for INSIGHT July 2012

These essays address non-deterministic systems engineering issues, intending to start the necessary discourse. Live Meeting will be active from 10:00am -5:00pm EST, and can be joined during meeting hours at: https://www.livemeeting.com/cc/incose/join?id=GKC4W8&role=attend&pw=WB%24c%25%7D%3D%3E7.

System Security Engineering WG 23Jan—Workshop: Security in SE-Handbook

The SSE Working Group will meet on Monday Jan 23 from 10:00-5:00 EST. The bulk of the day will be a kickoff of the project that will provide system security material for the INCOSE SE Handbook.

Participants are needed to help organize and draft the material. Also, we will be discussing essay drafts and seeking authors for the 2013 July issue of INSIGHT, with the intent that these essays will provide the raw material for editing into subsequent Handbook material.

Live Meeting will be active from 10:00am -5:00pm EST, and can be joined during meeting hours at: https://www.livemeeting.com/cc/incose/join?id=J426R5&role=attend&pw=WB%24c%25%7D%3D%3E7.

The detailed agenda is posted, with continuous updates, at www.parshift.com/s/IW12-SecWgAgenda.pdf

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Recent Meetings

Mary Compton, Sandia National Labs

October 2011—Ann Hodges, Systems Engineer in the Defense Systems & Assessments Mission Assurance Department at Sandia National Laboratories, presented a talk that defined traditional configuration management (CM), based on industry standards and best practices. She then summarized CMII, a more holistic CM model developed by the Institute of Configuration Management. Suggestions were presented for applying CM practices using a risk-informed graded approach. A copy of the presentation slides are posted on the Enchantment Chapter website.

November 2011—Greg Wyss, a Risk Analyst in the System Security Analysis Department at Sandia National Laboratories presented Risk-Based Security Cost-Benefit Analysis: Methodology and Example Applications.

A 2010 National Academy of Sciences report asked DOE to focus on "effective security risk management," and place less emphasis on quantifying or communicating "how much or little [security] risk exists."

Common security risk metrics require analysts to assess the likelihood of each scenario - something that is highly uncertain and can be rapidly changing, especially for rare attacks against high-security targets.

Greg described a new risk management method in which scenarios are evaluated and compared based on the degree of difficulty an adversary will encounter to successfully execute the attack scenario, as well as the consequences that would be expected to occur if the attack were successful.

This method allows comparison of scenarios and security risks across a variety of targets or consequences, or even across an entire enterprise, enabling decision makers to provide objective and unbiased justification for investment decisions that are intended to balance competing security interests (e.g., multiple facilities). Thus resulting in more robust and cost-effective security systems.

Greg's presentation summarized the theory behind the method and illustrated it through the use of examples. A copy of the presentation slides are posted on the Enchantment Chapter website.

December 2011—Eric Hales from the Institute of Configuration Management provided a half-day tutorial on Configuration Management and CMII Principles.

Attendees learned that it is possible to escape the "corrective action" operational mode through accommodating change and keeping requirements clear, concise and valid. CMII expands the scope of CM beyond traditional product definition—to *any* information that could impact safety, security, quality, schedule, cost/profit or the environment. CMII shifts the emphasis to integrated business processes.

The tutorial was free for INCOSE members and $100 for non-members.

December 2011—A fun-filled holiday social was had at El Pinto Restaurant. An entertaining trivia game at each table kept the conversation lively and sent El Pinto food prizes home with the winners: Larry Compton, Ron Lyells, Paul McGoey, and a shared win with Tana Lucy and Nick Kraemer. ∞

Next Meetings

Mary Compton, Sandia National Labs

January 12: A Function Point Overview with Potential Application in Systems Engineering,
Joseph R. Schofield, Sandia, Distinguished Member of the Technical Staff, retired.
Abstract: Function Point Analysis is the world's most widely used software measurement technique. The International Function Point Users Group (IFPUG) is the governing body for the Function Point ISO standard, certification, and testing. As the current President of IFPUG and a long time Certified Function Point Specialist, Joe will introduce the concepts related to function point counting, their applicability as a sizing measurement and project tracking mechanism, and their potential use beyond software. Cautions related to "faking estimations" and biases in estimating will also be revealed.

February 8: INCOSE International Workshop (IW) 2012 Report by IW Attendees,
Rick Dove, et al. (TBD) as IW12 participants.
Abstract: Reports from the Working Group workshops, special activities and events, and other significant happenings at IW12 held January 21-24 in Jacksonville, Florida—from chapter members that participated.

March 14: The Call to Action for T&E of System of Systems (manned - unmanned - autonomous - networked - self-evolving),
Thomas Tenorio, Principal Systems Analyst, WSMR/ATAMIR/NCI Test Engineering & Analysis Support
Abstract: Thomas Tenorio will outline the SE challenges that arise when devising independent and objective test and evaluation for warfighter systems that are increasingly intelligent, unmanned, interconnected, and self-organizing, particularly at brigade scale and composed of hundreds of heterogeneous components, also called System of Systems. One context is the DoD Unmanned Systems Roadmap FY2011-2036 which Thomas was instrumental in designing last year. Another context is the direct involvement of warfighters who clarify the spectrum of trustworthy knowledge they must have for deciding suitable, effective, safe, secure and survivable SOS's in the field. A third context is the effectiveness of today's "DOD Guide for SE of SOS" and of the Joint Mission Environment Test Capability (JMETC) designs of the SOS configurations to be tested. A forth context is the warfighter engagement scenarios that anticipate the realities of asymmetric and other kinds of warfare. Within this context Thomas will summarize the panels and papers, and report on the objectives, impediments, initiatives and resources that were identified in the Town Hall and World Cafe sessions held at the January El Paso ITEA conference and led by John Thomas, President, INCOSE. Also, Thomas will note the views of one industrial participant from iRobot Corp. ∞

Past President Heidi Hahn Sums up the Year

Heidi Hahn, Los Alamos National Lab

Well, 2011 has come and gone, and with it we mark another year of success for the Enchantment Chapter. Following up on the commitment I made at the beginning of my term as President, we continued to provide excellent technical programs and took good advantage of the LiveMeeting technology to bring in speakers from across the country as virtual presenters for our Chapter meetings. I want to acknowledge the following individuals, who provided interesting and informative talks for the Chapter this year:

- Rick Dove – Toward Systems with a Will to Live: Autonomic Awareness
- Paul McGoey – Knowledge Based Engineering in Aerospace (and Other Industries)
- Craig Nichols – Architectural Patterns for Self-Organizing Systems-of-Systems
- Stephen Sutton – Defending Software Applications from Threats Through Code Analysis
- Steven Booth – Waste Processing Cost Recovery at Los Alamos National Laboratory: Analysis and Recommendations
- Jennifer Narkevicius – Human Systems Integration in Railroad Applications: HSI Beyond DoD
- Ann Hodges – Configuration Management Basics
- Gregory Wyss – Security Risk Management and Cost-Benefit Analysis: Method and Example Applications

As has been traditional for the Chapter, our February meeting was devoted to outbriefs of the International Workshop and our April meeting was a report-out by the then-President of the UTEP Student Division, Octavio Castellanos.

We tried something new for our December Holiday Social this year – rather than having a speaker, we entertained ourselves by playing a trivia game, which had Systems Engineering trivia questions as well as questions about the Surrounding Area, NM State Symbols, Winter Holidays, and English Translations (of local places and things having Spanish names). Trivia title-holders for 2011 are Larry Compton, Ron Lyles, Tana Lucy (who shared her award with Nick Kraemer), and Paul McGoey. Each was awarded a pair of El Pinto salsas for their efforts.

That last category was a real stumper – to continue the fun, I've used the English Translation of the following words in this column: cerro, pajarito, quemazon, ventana, and vereda. See if you can find them all! Answers are on the back page of this newsletter.

I also want to acknowledge Eric Hales, who brought us a ½ day tutorial on Configuration Management and CMII Principles in December. After a year-or-more long hiatus from providing tutorials, the Chapter is back on track to provide this service to our members. Thanks to Board of Directors member Ann Hodges, we are already on the path to hosting a tutorial in Spring, 2012, so look for announcements about that in upcoming newsletters and updates.

Two other areas that the Chapter committed to for 2011 were collaborations and outreach to universities. We had a window of opportunity for a collaboration with the PMI Rio Grande Chapter this Spring, and hosted a joint dinner meeting with them in June. Dr. Ralph Giffin III from the Stevens Institute presented a talk entitled "Applying Project Management and Systems Engineering to Complex Problems" highlighting the overlaps and distinctions between the two fields. Tom Tenorio and Francis Peter also staffed a collaborative booth with ITEA showcasing professional organizations at the 2011 TAAC Conference in December.

Several Chapter members (Fil Macias, Tom Tenorio, and myself) served as presenters at UTEP's Systems Engineering Days in April and Tom also has been doing assessments of student projects for both UTEP and University of Arizona.

None of this would have happened were it not for the hard work of the Enchantment Chapter's Board of Directors: Tom Tenorio (Past-President); Woody Weed (Vice President and President Elect); Mary Compton (Secretary); Tana Lucy (Treasurer); Directors-at-Large Bill Bearden, Mark DeSpain (Sandia rep), Rick Dove (Newsletter wizard), Jorge Hernandez (IT), Ann Hodges, Ron Lyells (Honeywell rep), Francis Peter (Membership), Bob Pierson, Tom Tenorio, and Sharissa Young; and UTEP Student Chapter Advisor Eric Smith. A big Thank You to all of them, and special congratulations for many years of dedicated service to Bill and Mark, who will be leaving the Board after this year.

Finally, we held Chapter elections in November and I want to extend a welcome to a few new faces on the Board for 2012: Ricardo Pineda will serve as Vice President and President Elect (and a little bird tells me that he'll be sure to keep Eric on his toes as he transitions into a full-fledged Director-at-Large position). Heather Kraemer will join us as Secretary; she may have a steep hill to climb to fill Mary's shoes, but I know she can do it! Regina Griego will return to the Board for 2012. In spite of a burning desire to remain as Secretary, Mary was persuaded to take on the Treasurer's role. Tana will remain as a Board member, and Ann will become the Sandia rep. Jorge will continue to provide IT support, but as a Chapter member rather than a Director. And I will retire into the Past-President role and look forward to supporting Chapter President Woody Weed as he continues to move the Chapter along in 2012! ∞

UAS TAAC Outreach

Tom Tenorio, White Sands Missile Range

The chapter manned a booth jointly with ITEA (International Test and Evaluation Assoc.) at NMSU's annual UAS Technical Analysis and Applications Center (TAAC) Conference held December 6-8, 2011 at the Tamaya Hyatt Regency (http://taac.psl.nmsu.edu). Many companies attending expressed interest in INCOSE. The partnership of ITEA and INCOSE was valued. INCOSE's Autonomous System Test and Evaluation Working Group (ASTEWG) was of special interest to many. Thanks to NMSU/TAAC's Kathy Hansen and Steve Hottman for providing a free booth, ATA for sponsoring my attendance, and chapter board member Francis Peter for helping establish the INCOSE presence.

Kathy Hansen has expressed willingness to speak at one of our monthly meetings about the NMSU Arrowhead initiatives, including TAAC and PSL FAA COE (NMSU's Physical Science Laboratory FAA Center of Excellence), and also offered conference room opportunities for future Las Cruces based INCOSE meetings. ∞

Just Thinking

Leaders Wanted

Regina Griego, Sandia National Labs

Systems Engineers are leaders. The analogy I often use when discussing Systems Engineering is that of an orchestra. The sheets of music are the processes; they have to be written by masters in music, though not necessarily those that play every instrument.

The musicians are the various discipline areas that need to play together to create a beautiful harmony. They have to be trained in their instrument and their individual experience and mastery is important.

Finally, the conductor is the Systems Engineer. They set the cadence and they are concerned with the whole, while listening for every instrument. They are the ones that are orchestrating the overall 'product' offered to the customer. That product is fundamentally an experience and so the SE is concerned with the emergent properties. The individuals in the orchestra must trust the conductor's leadership.

In INCOSE today there are discussions around, and a Working Group on, Systems Engineering Competencies. Less than two years ago the UK Chapter released through INCOSE an SE Competencies Framework. I have worked in groups where we have developed SE competencies in professional circles. In most cases we give very cursory treatment to the 'soft' stuff, using words like "must have the ability to communicate in writing and make presentations". Leadership is tough to define, in general, we know it when we see it; but I maintain that you are not truly a Systems Engineer unless you are a leader.

What are some important aspects of leadership? First, someone should be following if you are leading; being an individual performer is no longer good enough. Second, relationships are more important than tasks. As a corollary, know your musicians. Third, communicate in a way that influences outcomes. For a Systems Engineer this mean being multi-lingual. They can speak the business case when speaking to those that influence the financial viability of a system. They can speak to the RF engineer when influencing them to follow the music in a particular way. The have to understand the various stakeholders that eventually use the system. These are just a few examples.

John Thomas our soon to be INCOSE President made a Journal Commentary for the January 2010 C4ISR Journal titled "Wanted Systems Engineers with Moxie". He very clearly identifies the arenas in which a Systems Engineer must exhibit leadership including, as part of an overall Management Team, as the Leader for an SE&I Team, and when partnering or influencing Component Teams.

What sticks with me when John talks is that being a Systems Engineer comes with an attitude, that attitude being one of leadership. You will never hear a Systems Engineer say, "That's not my job", when it comes to anything that eventually influences the outcome of a Systems Engineering endeavor.

A Systems Engineer is truly orchestrating the overall 'product' and whether there is one SE or a team of SE's, they all must be leaders. ∞

SE Graduate Courses Albuquerque Opportunity

Kirk Powell, Boeing Directed Energy Sys.

Boeing Directed Energy Systems is seeking to create another educational cohort group to engage in courses offered by Steven's Institute of Technology as part of their Master's Degree in Systems Engineering Program. This past year Boeing, Applied Technology Associates, the Air Force Research Laboratory, and Sandia Labs formed a cohort group to obtain a 4 course Master's Certificate in Space Systems Engineering. A cohort group allows Steven's to conduct on-site Masters courses in SE in a perfect format for professionals at an affordable cost.

The course format consists of 3 successive 8 hour course days (Thursday, Friday, Saturday) followed by 2 successive 8 hour course days (Friday, Saturday) four weeks later. The separation between sessions is ideal for absorption of the material and usually a project.

The full semester course is completed with a project or exam after the second session. Those of us who took the first Steven's series could not say enough about the excellent courses and outstanding instruction by professionals with hands-on experience in industry.

We are trying to create a new 12 person (minimum) cohort so that Steven's can offer SE courses 2 to 3 times / year in Albuquerque for the next 2 years. This is a great opportunity to obtain a world class SE education. In 60 days you complete a full semester graduate course counting toward a Master's in SE.

Contact kirk.powell@boeing.com for more information or see http://sse.stevens.edu/academics/sdoe for program specifics and detailed course listings.

We hope to hold our first class (TBD or SDOE 645 - Design for Reliability, Maintainability, and Supportability) in the March/April timeframe.

∞

New Chapter members

Francis Peter, Management Sciences

Enchantment Chapter now has 102 active members. We would like to welcome the following new INCOSE members to Enchantment Chapter:

Marlene Brown	Sandia National Laboratories
David Founds	USAF
Daniel Gonzales	Sandia National Laboratories
Joseph Merkling	Harris

The Enchantment sponsored Student Chapter of the University of Texas at El Paso is doing well in its second year of operation, with 14 active members. We welcome the following new member to the UTEP Student Chapter:

Matthew Hernandez and Kathleen Zurlinden

∞

Resources

From MITOpenCourseWare… Principles of Autonomy and Decision Making. This course provides a survey of reasoning, learning, and optimal decision making methodologies for creating highly autonomous systems and decision support aids. It focuses on principles, algorithms, and their application, taken from the disciplines of artificial intelligence and operations research. All materials are here.

From TED... imagine it's late 1990, and you've just met a nice young man named Tim Berners-Lee, who starts telling you about his proposed system called the World Wide Web. Ian Ritchie was there. And ... he didn't buy it. A short 6-minute story about information, connectivity and learning from mistakes (and getting your paper rejected). Watch now. ∞

Need Circle Award Evidence

Heidi Hahn, Los Alamos National Lab

If you have made a presentation or published a paper related to systems engineering in calendar 2011, please send a citation to me at hahn@lanl.gov by January 11, 2012 . The Enchantment Chapter will include that information in our yearly Circle Award submission. We have won the highest Gold Circle Award 5 years in a row now. ∞

Trivia Quiz Answers

(Heidi Hahn, page 4)

Cerro = hill
Pajarito = little bird
Quemazon = burning
Ventana = window
Vereda = path

Mark Your Calendar

Jan 21-24, INCOSE IW12, International Workshop, will be held in Jacksonville, Florida. See details at www.incose.org/newsevents/workshop/index.aspx.

Jan 24-27, 2012, ITEA: The T&E of Systems of Systems, will be held in El Paso, Texas, with a special track on Systems Engineering. Details at www.itea.org/files/2012/2012_Sytem_of_Systems_Workshop.asp

Mar 19-22, Conference on System Engineering Research (CSER), will be held in St. Louis, MO. Details at http://cser.mst.edu/.

Jul 9-12, INCOSE IS12, International Symposium, will be held in Rome, Italy. Details at www.incose.org/newsevents/events/details.aspx?id=142.

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Connect to Your Community of Practice

Chapter meetings with a focus on systems engineering are held monthly, usually the second Wednesday, except in December. The December meeting is an annual social event, with mingling, dinner, and a speaker chosen for enjoyment by systems engineers and guests alike.

Monthly meetings feature speakers from out-of-town that are visiting the area for other reasons, and local (more or less) subject matter experts on topics of relevance.

On occasion special facility tours are arranged, sometimes as the monthly meeting, and other times on a separate schedule.

Chapter meetings begin at 4:45. After chapter news, announcements and introductions, the presentation and discussion generally lasts until 6:00, all carried live on Live Meeting for those who can't attend. Recordings are not made.

Tutorials with in-depth coverage on topics of interest are arranged approximately twice a year. Delivered by experts in the field, tutorials range from 1/2 day to day+ durations, and generally involve a tuition.

Mix with people who have the same professional interests as you do, but with a diversity of perspective beyond daily workmates. It comes in handy when you need help or answers to questions outside your accumulated experience, need a connection at another organization, or simply want some mind stretching thought.

Meeting and event notices routinely go to all INCOSE members within the Chapter's geographic territory; but Live Meeting connections, special notices, and collaborative opportunities are generally limited to registered Chapter members. Obtain chapter membership on the INCOSE web site by changing your profile or so selecting as you renew membership.

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Chapter Board

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