Chapter Bylaws Revision Needs Your Vote

Rick Dove, Chapter President, Paradigm Shift International

The Chapter bylaws were last developed in 2003. As described by Bob Pierson below, Chapter bylaw understandings and requirements have changed at INCOSE and at the Chapter, necessitating revised by-laws. The process requires that a certain percentage of the Chapter's membership vote, and that 2/3^{rds} of those who vote approve of the proposed revision, before they revised version can become our new By-laws. The Chapter Board unanimously recommends approval, in order to realign our bylaws with new INCOSE Chapter-bylaw requirements, and to eliminate old bylaw provisions now inappropriate.

You will receive an email message ballot to vote YES or NO on the Board-recommended revision as a complete package, not as individual revisions. Approving some revisions and not others destroys the revision inter-relationship integrity of the package.

The email will have the recommended revised Bylaws attached, and a summarization of the recommended changes and reasons for the changes. Please vote when it arrives.　　∞

What's Up with the Bylaws?　　*Bob Pierson, ATA*

Over the past few years, our chapter's board has become aware of a few problems and challenges with the current chapter bylaws. For example, the bylaws are unclear how to proceed when a chapter officer has to vacate their post during their term; the bylaws contradict one another about seating at-large directors from larger organizations; the bylaws specify a fiscal year that no longer matches INCOSE's fiscal year; etc.

Twelve years have passed since our bylaws were adopted, and our chapter has grown from a few founders huddled around a conference table to a hundred+ members spread across New Mexico and into Texas. In addition, other chapters experienced similar problems with INCOSE's old template, and bylaws that were once mandated by the central office have now been revised. It is time for a tune up. Please help us with your vote.　　∞

July 8—Summer Social Event　　*Mary Compton, Sandia National Labs*

This year's Summer Social features a tour of the Sandia Tram Lower Terminal followed by networking at Sandiago's Mexican Grill. One guest and non-members welcome. The Tram Lower Terminal tour is limited to the first 30 sign-ups. There is space for up to 10 more participants (total of 40) for the networking portion of the event. Networking is scheduled for 6:15 - 8:00 PM in the Cantina Room at Sandiago's.

Cost: Free … with appetizers and one ticket good for a beer, glass of wine, or margarita (up to $10) for all participants.

**Location:** 30 Tramway Road in Albuquerque. No charge for parking after 5:00 PM.

Check-in: Between 5:00 & 5:30 PM. Tour starts promptly at 5:30 PM.
Networking until 8:00 in Sandiago's Cantina Room.

RSVP is required by 12:00 noon on July 6th; contact me at mlcompt@sandia.gov or 845-9268. Let me know you are coming (tour and networking or networking only) and whether or not you are bringing a guest. Sorry, the social does not include a ride on the Tram!　　∞

Sandia Tram
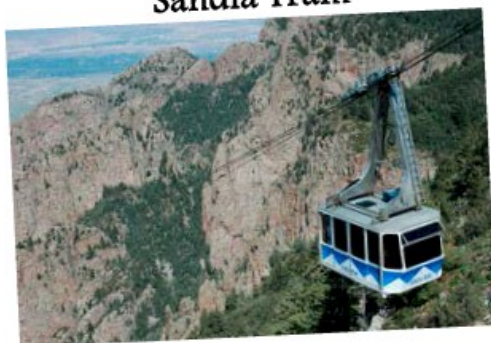
View from Sandiago's

Cantina Room at Sandiago's

October 23 Tutorial—Interface Management Theory to Modeling

Title: Interface Management—From Theory to Modeling
Presenter: Mathew Hause. **Date:** Friday, October 23, 2015
Cost: INCOSE member $150. Non-member $200. Student member $0.
Location: Work Force Training Center, 5600 Eagle Rock Ave. NE, Albuquerque, NM, http://www.cnm.edu/depts/wtc/index.html.

Abstract: Systems interoperate using interfaces. They exist between capabilities, organizations, people, systems, systems of systems, and so forth. Interfaces are used to support both system to system communication as well as supporting the complete set of enterprise goals. This tutorial addresses system interface-management issues and the benefits of model-based approaches. An initial focus will be placed on interface information content that needs to be addressed at each level of system decomposition – from external stakeholders to system boundary to, eventually, system component- to-component. The focus will then shift to methods for reducing interface management theory to model-based and functional/logical design practice. We will also cover system interconnection and communications, how they change, operate and evolve over time to implement mission goals and to satisfy stakeholder needs.

Topics:
- Defining stakeholder goals and required capabilities
- Interface definition with MBSE
- Logical Architecture Interfaces
- Physical Architecture Interfaces
- Allocation across cross cutting views
- Technical Standards Views and interfaces
- How behavior drives interfaces which drive behavior
- Service Oriented Architectures

Intended Audience: Systems Engineers, Managers, and Enterprise Architects.

Learning Objectives:
- Setting enterprise goals and capabilities.
- Defining interaction requirements.
- Implementing effective and testable interface specifications.

Participants will receive a) Instruction: An introduction to MBSE and a detailed look at interfaces through different levels of abstraction. b) Course Notes: Each student will receive a set of course notes in PDF format for reference. c) Practice: Students will have an opportunity to practice MBSE modeling in classroom exercises.

Biography: Matthew Hause is a PTC Engineering Fellow and GTM Technical Specialist, the co-chair of the UPDM group a member of the OMG Architecture Board, and a member of the OMG SysML specification team. He has been developing multinational complex systems for over 35 years. He started out working in the power systems industry and has been involved in military command and control systems, process control, manufacturing, factory automation, communications, SCADA, distributed control, office automation and many other areas of technical and real-time systems. He has written over 100 technical papers on architectural modeling, project management, systems engineering, model -based engineering, human factors, safety critical systems development, virtual team management, product line engineering, systems of systems, systems and software development with UML, SysML and Architectural Frameworks such as DoDAF and MODAF. Matthew studied Electrical Engineering at the University of New Mexico and Computer Science at the University of Houston, Texas.   ∞

For registration form and payment information, including a PayPal option, select Tutorials under the Library tab at
www.incose.org/enchantment

Prep Courses for INCOSE SEP Accreditation

Ann Hodges, Sandia National Labs

Make 2015 your year. Gain international certification of your knowledge, experience and skills. The CSEP Preparation 4-Day Course will place you in the best possible position to pass the CSEP exam. To learn how to successfully pass the exam and complete the application, join a course near you.

Course details http://dmmsclick.wiley.com/click.asp?p=24024487&m=91227&u=2388018
Course brochure http://dmmsclick.wiley.com/click.asp?p=24024487&m=91227&u=2388019

Many courses are available. Those close by:
July 6 - 9 | Las Vegas, NV | Find out more http://dmmsclick.wiley.com/click.asp?p=24024487&m=91227&u=2388028
August 17 - 20 | Austin, TX | Find out more http://dmmsclick.wiley.com/click.asp?p=24024487&m=91227&u=2388029
November 2 - 5 | Las Vegas, NV | Find out more http://dmmsclick.wiley.com/click.asp?p=24024487&m=91227&u=2388032

Brochure indicates major savings possibility: "Consider conducting this course at your premises for savings of up to 50% in comparison to attending a public delivery." If interested in exploring this possibility contact alhodge@sandia.gov.   ∞

Recent Meetings

Ann Hodges, Sandia National Labs

Recorded presentations are posted on the Enchantment Chapter website.

April 8—Dr. Clifford Whitcomb, Professor and Chair, Systems Engineering Department, Naval Postgraduate School, spoke on design thinking and what it means for systems engineering.

Design Thinking is a recently defined approach to engineering for product design. The concept began with the commercial company Ideo, and has since become a major part of the design curriculum at the Stanford University school. The Naval Postgraduate School in Monterey, CA, has been teaching Design Thinking in the context of engineering education as part of a masters program in systems engineering.

This presentation described Design Thinking in a basic form. The relationship to systems engineering was then explored, particularly as it relates to systems engineering processes and systems thinking. These concepts were then presented in the context of developing systems engineering competencies. Finally, some radical ideas were presented for the education and development of systems engineers into the future.

May 13—Dr. Beth Wilson, Senior Principal Engineering Fellow, Raytheon, spoke on some of the National Defense Industrial Association (NDIA) Systems Engineering Division (SED) activities that Dr. Beth Wilson is involved in.

She is the co-chair for the Developmental Test and Evaluation Committee and the Systems Security Engineering Committee. She is active in the Modeling and Simulation, Architecture, and Systems of Systems Committees and has championed joint projects between committees and with INCOSE. NDIA SED meets 5 times a year to discuss systems engineering topics and trends of interest to the DoD Acquisition community. Between meetings, committees work projects that move the needle in the way we design and deliver our systems.

Among the projects Dr. Wilson summarized are "Erasing the Line with Title 10: Best Practices in Integrated Testing," "Test and Evaluation Issues for Systems of Systems (SoS): Creating Sleep Aids for Those Sleepless Nights," "Test Perspectives for Architecture," "Partnering for Success: The Chief Developmental Tester and Industry Test Lead," "Reference Architectures for Model Based Distributed Integration and Test," and "Cyber Testing Guidelines Recommendations."

June 10—Larri Rosser, Chief Engineer within Ratheon's IPx mission area, spoke on challenges related to coordination between agile software methodologies and traditional systems engineering efforts. This talk presented work developed by the INCOSE Agile Systems Engineering Working Group, proposing methods for cross-functional teams that include Systems and Software Engineers working on customer "pull" projects to produce software products.

This talk reviewed an Agile SE Framework presented at the INCOSE 2014 International Symposium, which aligns with agile software development methodology, and describes the role of the Systems Engineer in this context. She presented an iterative approach to the aspects of development (requirements, design, etc.) that are relevant to systems engineering practice.

This approach delivers frequent releasable products that result in the ability to absorb changes in mission requirements through collaboration between systems engineers and software engineers. The Agile SE Framework defines a way to scale agile from individual agile software teams with a few members to large projects that require a planned architecture and coordinated efforts.   ∞

Next Meetings   *Ann Hodges, Sandia National Labs*

July 8: Summer Social - A Tour of the Sandia Tram Lower Terminal & Networking at Sandiago's

Location: 30 Tramway Road NE, Albuquerque.

Abstract: Check-in: between 5:00 and 5:30 PM. Tour starts promptly at 5:30 PM and will last approximately 45 minutes. Tour is limited to the first 30 participants! Networking 6:15 – 8:00 PM in the Cantina Room. This event is free but you must register. Includes appetizers and 1 drink ticket good for 1 beer, 1 glass of wine, or 1 margarita (up to $10). Participants must be 21 or over. Required: RSVP to Mary Compton, mlcompt@sandia.gov, by July 6, 2015 at 12 noon. See article page 1 for details..

August 12: Model-Based Systems Engineering with the New ISO 19450 Standard – Object-Process Methodology (OPM).

Dr. Dov Dori, Visiting professor in MIT's Engineering Systems Division, and Technion, Israel Institute of Technology .

Abstract: Model-based systems engineering promotes the use of modeling and models as focal design artifacts to enhance the rigor and robustness of systems engineering activities throughout the various phases of a system's life cycle, with emphasis on the early, conceptual phases. The Object Management Group's Systems Modeling Language (SysML) and Object-Process Methodology (OPM) are the two conceptual modeling languages currently in use. In this presentation, Technion Professor Dov Dori, currently a visiting faculty at MIT, will: highlight the working principles of OPM, with examples from various domains; explain the differences between OPM and SysML; and present the upcoming ISO 19450 OPM standard.

September 9: Agile 104: Quality Fundamentals: The Art of Systems Engineering.

Rick Dove, INCOSE Fellow, CEO/CTO Paradigm Shift International, Adjunct Professor Stevens Institutue of Technology.

Abstract: Agility is enabled and maintained by a necessary and sufficient common structural architecture and ConOps in systems of all kinds; from agile development and deployment processes, to the agile systems and products that are deployed. This webinar will focus on sustaining system and SE process agility in operational environments that are Unpredictable, Uncertain, Risky, Variable, and Evolving (UURVE). Sustainability is shown as enabled by an architecture and a Concept of Operations based on design-quality principles of Requisite Variety, Parsimony, and Harmony. Examples and anti-examples will be drawn from a variety of domains exhibiting or ignoring these design-quality principles. The presentation will lead off with a quick review of fundamentals for agile system and process architecture, requirements, and design previously covered in Agile 101, 102, and 103.   ∞

2015- 2016 UTEP Student Division Revitalization Planning

Aditya Akundi, President, UTEP Student Division

With the mission of revitalizing the University of Texas at El Paso (UTEP) Student Division of the Enchantment Chapter of INCOSE, and to increase student INCOSE membership, several INCOSE members met, including:

- Thomas Tenorio, Chapter Board member
- Fil Macias, Chapter Member
- Aditya Akundi, current UTEP Chapter Student Division President
- Eric Smith, Chapter Board member and Advisor to the UTEP Student Division.

Strategy action items to increase student enrollment in the UTEP Student Division and to actively engage students in Fall 2015 include:

- Provide incentives to UTEP students who enroll as INCOSE student members.
- Provide training materials and INCOSE Handbooks to students.
- Active ASEP/CSEP training programs to attract students.
- Providing scholarships to students on behalf of INCOSE division.
- Providing students with extra credits in class for attending monthly webinars/seminars.
- Open the division to undergraduates to attract a bigger pool of students.
- Collaborate with local UTEP student chapters such as IIE.
- Facilitate student social gathering for networking with local INCOSE community.
- Fundraise for student trips to INCOSE Conference and Seminars.
- Initiate collective student led projects on behalf of INCOSE chapter at UTEP.
- Outreach to students (Graduates and Undergraduates) at UTEP from fall 2015 (Ex: emails, social media, web page, in-class presentations, etc.)

Year 2015 Activities to date

1. Visits to local clinical practice sites: The UTEP Student Division of the Enchantment Chapter visited El Paso's Western Refining in early March, as part of the opening dialog with local businesses to establish clinical sites for engineering practice, for engineering undergraduate and graduate students.
2. Bi-monthly Student Seminars: A new bi-monthly seminar series was initiated by INCOSE UTEP Student chapter in collaboration with IIE student chapter, aimed to inform undergraduate & graduate IMSE students on current trends, or research in Industrial, Manufacturing & Systems Engineering frontiers.
3. Student Outreach: Around 20 High School students were invited to Industrial, Manufacturing & Systems Engineering Department where UTEP chapter actively participated to spread awareness on Systems Thinking among the students along with conducting workshops on, Additive Manufacturing and Robotic Simulations.
4. Guest Lectures: Charles Babers, CEO of NeoLogica Scientific LLC / NeoLogica Engineering & Consulting Services of El Paso, TX, an Architecture development company, delivered a guest lecture to 20 Systems Engineering graduate student is April 2015. Topics included DoDAF, Zachman, and the Universal Architectural Framework.
5. Local Conference: IMSE (Industrial, Manufacturing & Systems Engineering) Day 2015 occurred on April 23 and 24, bringing 8 high quality speakers to communicate with the IMSE students, and to lead engineering workshops.
6. Advisory Board of IMSE Dept. met an April 24, with board members: Dr. Shawn Smith of Engility Corp., Mr. Joe Diaz of MIRATEK, Inc., Brig. Gen Pete Palmer (RET) of GDC, the EDGE Network, Mr. Fil Macias of WSMR, Mr. Tim Conn of URS Corp., and Mr. Dennis B. Hodge of SAIC. Board Members discussed the state and outlook of the IMSE Dept.
7. Faculty Retreat: IMSE Faculty took a half-day retreat in May 2015 to discuss the health of the department, as well as strategies for re-vitalizing undergraduate and graduate programs.

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Organizing Committee, Students and Guest Speakers at IMSE Day 2015

June's Systems Thinking Tutorial—What You Missed

Mary Compton, Sandia National Labs

On June 19, 2015 James Martin, enterprise architect and systems engineer working for The Aerospace Corporation, presented a tutorial entitled "Systems Thinking: Learning How to Think About Systems in a Holistic Manner " for the INCOSE Enchantment Chapter.

System thinking is usually limited to the use of systems coupling diagrams and system archetypes to help understand the nature of feedback and complex system behavior. A systems engineer needs more than these tools to fully appreciate how to think clearly about systems in a truly holistic manner.

Martin presented some essential principles and concepts of systems and taught participants how to use these principles and concepts in a "systemic" fashion to improve their ability to think about systems in a holistic manner.

Martin explained how to use the system thinking frameworks described below as tools to better see the "whole" solution to a complex problem. Participants were able to practice using these frameworks as tools while completing the tutorial exercises.

Concept Mapping

Systems architecting includes meeting user needs and stakeholder concerns. Effective systems architecting involves ascertaining relevant concepts and principles. To identify concepts the architect formulates architectural questions. The answers to these questions contain the relevant concepts (nouns) and interactions (verbs) between those concepts.

Concepts and interaction are used to frame the problem in the form of a concept map. The problem is mapped to potential solutions. Solutions are also framed using concept mapping. This is an iterative process. For example, one use case is framed using a concept map. Then another use case is framed. The two concept maps can be used to check for wrong or new information.

PICARD Theory

The PICARD Theory is an important tool developed by James Martin that can be used to help see the "Whole System." It assists with conceptualizing systems.

In PICARD-based systems thinking "any system is the point of view of one or several observers" (from An Introduction to General Systems Thinking by Gerald M. Weinberg, 1975). Any two observers see different systematic aspects of the same thing.

Using the PICARD theory, depicted in Figure 1, a system is seen as a holistic image of its parts, interactions, context, actions relationships, and destination (impact) from the point of view of an observer.

Seven Samurai Framework

The Seven Samurai assists in formulating a holistic appreciation of the whole solution. It should be used to encourage true Systems Thinking. The Seven Samurai (systems) with their interactions and relationships are depicted in Figure 2.

Knowledge Pyramid

The Knowledge Pyramid, depicted in Figure 3, helps understand how modern systems convert data into information that is used for the discovery of knowledge to be used in making better decisions. Signals, data, and information belong to the system domains and lead to knowledge and wisdom of the enterprise domains.
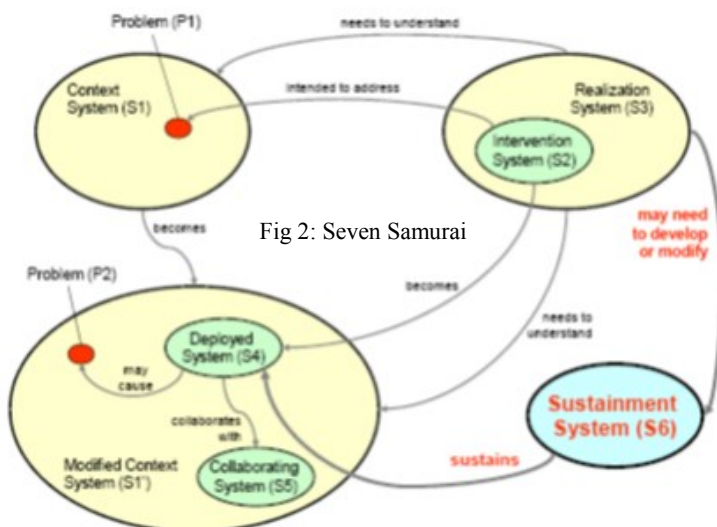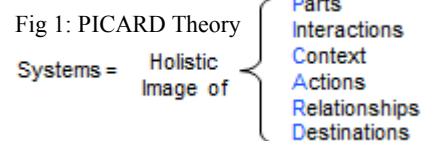
∞

Fig 1: PICARD Theory

Systems = Holistic Image of { Parts, Interactions, Context, Actions, Relationships, Destinations }
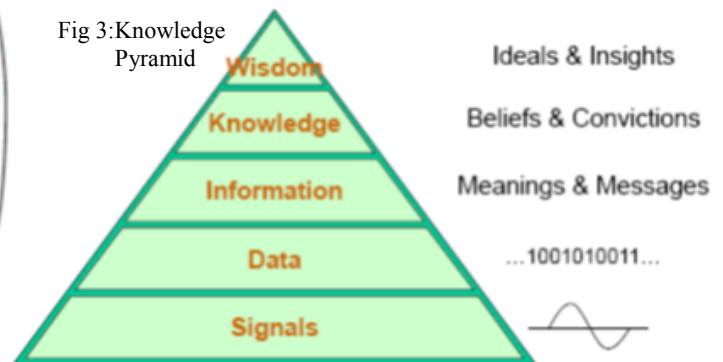
Fig 2: Seven Samurai

Fig 3: Knowledge Pyramid

Agile Security Anyone?

Rick Dove, Paradigm Shift International

Now here's an application for Systems Thinking! An article in the July 2015 INSIGHT practitioner's guide issues a call to arms for the Systems Engineering role in Agile Security—security at least as agile and innovative as the adversarial community. The article outlines considerations for next generation Agile Security.

Next year's July 2016 INSIGHT will be themed for Agile Security, and contain eleven 2000-word essays from various systems engineering view points, intended as a beginning for next generation security. Contact rick.dove@parshift.com before the end of September with your intent to contribute.   ∞

INCOSE Complex Systems Working Group

*Mike Watson, NASA and Co-Chair
Complex Systems Working Group*

The purpose of the Complex Systems Working Group (WG) is to enhance the ability of the systems engineering community to deal with complexity. This WG works at the intersection of complex systems sciences and systems engineering, focusing on systems beyond those for which traditional systems engineering approaches and methods were developed.

The WG focuses on the challenges and opportunities presented by systems with large numbers of components, with even greater numbers of interactions distributed in scope across multiple scales and/or across large areas. Systems of interest are characterized by rich interdependence among diverse components, non-linearity, open systems boundaries, networks of causality and influence (vice linear causal chains), emergence, varied and changing system goals, self-organization, and multi-level adaptation. These traits limit the utility of traditional systems engineering paradigms, which are generally centralized, goal oriented, requirements driven, and reductionist in approach. These traits, however, are increasingly the norm and not the exception. The Complex Systems WG collaborates with the Systems Sciences WG to define the scientific basis of these characteristics.

Complexity is a characteristic of more than just a technical system being developed. The socio-technical ecosystem in which a system under development will be employed exhibits these attributes, as does the environment that gave rise to the challenge or opportunity to which the system was developed in response. Further, the design and development of technical systems is a complex endeavor itself. It is critical for systems engineers to understand the nature of the systems with which they are working, and of which they are a part, to be effective.

The goals of the Complex Systems WG are to communicate the complexity characteristics to systems engineering practitioners; provide knowledge and expertise on complex systems in support of other INCOSE Working Groups; facilitate the identification of tools and techniques to apply in the engineering of complex systems; and provide a map of the current, diverse literature on complex systems to those interested in gaining an understanding of complexity.

The Complex Systems WG has developed a "Complex Systems Primer" which briefly categorizes various approaches to handling complexity in systems engineering endeavors. This Primer is not an exhaustive treatment of the subject, but provides systems engineering practitioners with a view of the landscape in dealing with complex systems. A list of 15 guiding principles for acknowledging and embracing complexity within systems engineering is featured. Also included are tables on candidate approaches to address complexity in problem context or environment; and selected modeling methods for complex systems.

This WG is currently seeking to expand collaborations with other INCOSE WGs. These collaborations provide assistance in relating complex systems insights to relevant activities in other working groups, and better integrate and align the Complex Systems WG's approaches for dealing with complexity with the range of systems engineering communities represented in INCOSE. In addition to our work with the Systems Sciences WG, active collaborations are currently in discussion with the Agile SE WG and the Natural Systems WG.

Jimmie McEver   Mike Watson

The Complex Systems WG chair is Dr. Jimmie McEver, of the Johns Hopkins University Applied Physics Laboratory. Co-chair is Dr. Michael Watson, of the NASA Marshall Space Flight Center.

To learn more or inquire about participation in this WG, contact Jimmie at jimmie.mcever@jhuapl.edu.   ∞

MIT Survey on Technology Readiness Levels—With Reward 4U

Katharina Tomaschek, MIT Sloan School of Management

Your participation is invited for a study on the state-of-the-art practice of Technology Readiness Levels (TRLs) and challenges using this method. This study is conducted by a research team from MIT Sloan School of Management under the supervision of Professor Steven Eppinger and Professor Nitin Joglekar. We believe that a better understanding of the TRL practice will benefit not only future academic work but also the daily practice in industry applications. Your opinion on TRLs is very valuable to us and we would highly appreciate if you take the time to fill a 20-minute online survey.

To thank you for your participation, we will send you the analysis briefing.

The link to the online survey will be distributed in an emailing in the next few days. The survey will be online from 01July-24July. Please pass along the link to your colleagues and friends working on TRLs.   ∞

See the Chapter Plans!

Rick Dove, Paradigm Shift International

Every year in the first quarter the Chapter Board creates a new Strategic Plan and Operating Plan, in response to the member survey done at year end to guide the following year.

The Chapter mission is to Provide Professional Development for Members, with four active goals: Recognition as the regional voice of SE, as the go-to place for professional development, as having member rewarding activities, and as a reliable and effective Chapter. You can review the details under the **About the Chapter** tab at web-site www.incose.org/enchantment. ∞

INCOSE President Attends Chapter Board Meeting—With Advice

David Long, INCOSE President 2014 & 2015, attended the Chapter's 22-April Board meeting, and we continued the discussion at dinner afterwards. His subsequent message below reflects his thoughts on the experience, and galvanized some Board thought and action to seek some "young blood" that can represent the professional development needs of new systems engineers in Board planning.

From: David Long, April 24 - Thank you all for allowing me to sit in on the Enchantment Chapter leadership meeting on Wednesday night and then the exceptional hospitality during dinner. I left with several actions to follow up on, things I think we can do at a central level to ease the burden and assist at the chapter level. I also left impressed with the Enchantment Chapter leadership and optimistic on the way forward. You have a very high-powered and passionate board which is a testament to your leadership and commitment. I hope you can draft some young blood and begin to develop the next generation of leaders, but that is the only challenge that I saw. If I can be of any assistance – to the leadership or the chapter at large – please don't hesitate to call. ∞

Advice Taken—Welcome Young Blood Anthony Matta

Jeni Turgeon, Sandia National Labs

The Enchantment Chapter would like to welcome one of our newest members, Anthony Matta, both to the chapter as well as to an observer position on our Board of Directors, pending elections for a permanent position in 2016.

Anthony has spent most of his career working in software and web development applications involving various web and object and oriented languages. He is currently employed at Sandia National Laboratories in the High Confidence Systems Environment group. Before that he was centered in the Technical Area-V (TA-V) Nuclear Facilities Engineering department where he provided software subject matter expertise with engineering principles,

approaches, methods, and the concepts of systems thinking to all software systems involved in the TA-V facilities (research reactor, critical assemblies, and irradiation facility). This included configuration management systems, control software, firmware management, and enterprise information systems. Most recently Anthony was the technical lead and lead architect for integrating and implementing the TA-V facility's CM tool, eB, and he was the lead architect and developer for the TA-V Work Planning & Control and engineered safety tools.

When in TA-V, Anthony participated and guided nuclear quality processes, software quality engineering practices development, safety software developments, and other critical applications. His current fo-

cus is on building a Model Based Systems Engineering (MBSE) core capability that will be utilized across the Sandia complex.

Anthony's participation on the Enchantment Chapter's Board of Directors is a calculated effort to address a recommendation from INCOSE's president, David Long.

Anthony began attending Board meetings in May. We hope that Anthony's involvement with the Board ignites the beginning of our quest for identification and development of our future leaders. ∞

The Art of Embraceable System Design – Two Free Workshops

Rick Dove, Paradigm Shift International

This is groundbreaking work that should give all participants deeper insight into the art of systems design.

Two ¾-day, no-cost, collaborative discovery workshops in Albuquerque will look at a series of short videos and other source material by and about people who make embraceable designs. These two workshops will be held in Sep/Oct/Nov 2015 time frame, dates to be announced in next newsletter.

We expect to learn the most from artists in many different domains. The ones we are interested in are recognized for repeatedly designing works that are broadly embraced. Artists are of interest because the effectiveness of their work requires that their work be embraced, and their users (of all kinds) declare the artist's success by broad voluntary usage and acclaimed appreciation. Examples: Frank Lloyd Wright and Michelangelo.

We will also learn from more tradition system designs. Why is spreadsheet software so well employed? What distinguishes the work of Buckminster Fuller? What underlies the embraceable strategy of the Google Advanced Technology And Projects (ATAP) program run by Regina Dugan (past-DARPA lead)?

Many more examples from the worlds of Art and Systems will be included.

We seek to understand domain-independent fundamental principles that are employed, either consciously or unconsciously, by excellent designers, that cause the world to enjoy interacting with what they produce; and eventually show how these principles apply and relate to embraceable systems design in all domains. Revelation takes reflection. Things to consider between workshops will be suggested, but will be self determined, exploring that which entices individual-participant deeper understanding.

In the end we want insights that can inform system architecture design, software design, process design, device design, warfighter system design, product design, organizational design – virtually systems of all kinds. We will also examine any of these kinds of systems that have achieved embraceable status, and those that have failed, asking why and how. Spread sheet software tools, for instance, appear to be user-embraceable. Security systems and policies might be an example on the other extreme, from the user's acceptance point of view.

Send your interest and thoughts to dove@parshift.com. ∞

Resources

From Cornel University: <u>watch</u> Seven landmark video lectures by Richard Feynman. "'Nature,' said physicist Richard Feynman, 'uses only the longest threads to weave her patterns, so that each small piece of her fabric reveals the organization of the entire tapestry.' With those words Feynman ended the first of his famous 1964 Messenger Lectures at Cornell University, a talk entitled 'The Law of Gravitation, an Example of Physical Law.' The lectures were intended by Feynman as an introduction, not to the fundamental laws of nature, but to the very nature of such laws." www.openculture.com/2012/08/the_character_of_physical_law_richard_feynmans_legendary_lecture_series_at_cornell_1964.html.

From Strange Loop Conference 2013 Keynote, <u>watch</u>: *What Is a Strange Loop and What Is It Like to Be One?* "Douglas Hofstadter attempts to get across the crux of these intuitions about the mysterious concept of 'I.' The *Strange Loop* name comes from Douglas Hofstadter's book *I Am a Strange Loop*, which defines the concept of a 'strange loop' as a self-referential hierarchical system and postulates that a strange loop in the brain is the essence of consciousness. Douglas Hofstadter's Pulitzer-prize-winning book *Godel, Escher, Bach: an Eternal Golden Braid* (1979) has had considerable impact on people in many disciplines, ranging from philosophy to mathematics to artificial intelligence, to music, and beyond." www.infoq.com/presentations/strange-loop-keynote**.**

From Lambda Jam 2013, <u>watch</u>: *Systems that Run Forever Self-heal and Scale*. "Joe Armstrong outlines the architectural principles needed for building scalable fault-tolerant systems built from small isolated parallel components which communicate though well-defined protocols. Joe is the principal inventor of Erlang and coined the term 'Concurrency Oriented Programming'. At Ericsson he developed Erlang and was chief architect of the Erlang/OTP system." www.infoq.com/presentations/self-heal-scalable-system.

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New Chapter Members

Ann Hodges, Sandia National Labs

Enchantment Chapter now has 105 active members. We would like to welcome the following new INCOSE members to Enchantment Chapter:

Jeanne Evans	Sandia National Labs
Alfonso Lopez-Gaston	Sandia National Labs
Fil Macias	White Sands Missile Range
Anthony Matta	Sandia National Labs

And welcome to new Student Member: Daniel Appel

∞

Connect to Your Community of Practice

Chapter meetings with a focus on systems engineering are held monthly on the second Wednesday, except when social events occur, with mingling, dinner, and often a speaker chosen for enjoyment by systems engineers and guests alike.

Monthly meetings feature speakers from out-of-town as well as local 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 pm.

After chapter news, announcements and introductions, the presentation and discussion generally lasts until 6:00 pm, carried on GlobalMeet for anybody to access who can't attend in person.

Tutorials with 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 announcements, event notices, and GlobalMeet links routinely go to all INCOSE members within the Chapter's geographic territory; as well as to names on a special *information* list open to one and all. Sign up for the *information* list with a request to the Chapter secretary listed below.   ∞

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