



Chapter Kick-Starters Projects – Concept of Operations

Rick Dove, Chapter President, Paradigm Shift International

This year the Chapter will experiment with Kick-Starters projects, attempting to engage interested Chapter members in knowledge-discovery activity relevant to Systems Engineering. These projects will usually start out informally, and act as kick starters for more serious projects. This minimizes the effort to support them, and makes it easier for people to participate without a formal tight commitment.

A kick-starter project would investigate an issue, perhaps in quarterly newsletter articles, discussion forums, and/or workshops.

Mission – Engage interested parties in the exploration and development of the nature of an issue. Project leadership has responsibility to find interested parties, positioning them appropriately to be contributors, establishing the means of collaborative project dialog, and managing the project to conclusion.

Objective – Converge on a clear and crisp white paper-ish document (perhaps a newsletter page) that outlines the essence of the core issue investigated, and potentially defines a follow-on project. If a project definition occurs, this would be followed by recruitment of appropriate parties to engage in research and development that would result in a paper, or perhaps even an INCOSE Product.

Strategy –

- Discover issues of interest sufficient to engage two or more members in the investigation of the general nature of an issue.
- Introduce project kick-off with an article in the newsletter by project leadership.
- Provide means to support effective collaborative activity, e.g., email reflectors, web discussion forums, web meeting tools, concept map tools, and a place on the Chapter website to capture progress.
- Provide means to socialize the activity to entice more member-engagement, e.g., quarterly newsletter coverage, chapter website presence, email notices of scheduled kick-starter activity, etc.
- Provide means to encourage activity progress, e.g., an expected progress report in successive quarterly newsletters.
- Project leadership is responsible for project kick-off, the progress of the project, and providing status in quarterly newsletters.

See page 5 for the project kick-off of *Discovering Principles of Embraceable System Design*.

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June 19 Full-Day Tutorial/Workshop on Systems Thinking

Title: Systems Thinking Workshop: Learning How to Think About Systems in a Holistic Manner

Presenter: James N. Martin, PhD. **Date:** Friday, June 19, 2015

Cost: INCOSE member \$200. Non member \$250. Student member \$0.

Location: Albuquerque, NM, to be announced soon.

Abstract: System thinking has been touted as the “Fifth Discipline” in Peter Senge’s famous book by that name. However, this is usually limited to the use of systems coupling diagrams and system archetypes to help understand the nature of feedback and complex system behavior. You will need more than these tools to fully appreciate how to think clearly about systems in a truly holistic manner. This workshop will teach you some essential principles and concepts of systems and how to use these in a “systemic” fashion to improve your ability to think about systems in a holistic manner. You will learn about the PICARD Theory and the Seven Samurai Framework. You will see how the Knowledge Pyramid helps you understand how systems convert data into information that is used for the discovery of knowledge for making better decisions. About half of our time together will be team working exercises to understand and appreciate these ideas.

Topics:

- The Concepts of System and Holism as a Basis for Systems Thinking.
- On the Use of Concepts and Principles for Improving SE Practice.
- How to Conceptualize Systems... Using the PICARD Theory.
- Seven Samurai Framework: Holistic Appreciation of Whole Solution.
- Using the Knowledge Pyramid as a Framework for Modern Systems.

Intended Audience: Engineers of all Disciplines, Managers, Leaders and Decision Makers.

Learning Objectives:

- Use various systems thinking frameworks.
- Apply systems thinking principles and concepts.
- Better see the “whole” solution to complex problems.

Biography: Dr. James Martin is an INCOSE Fellow with the Founders Award, founder and current leader of the Systems Science Working Group, and was a key author on the BKCASE project development of the SE Body of Knowledge (SEBOK). Currently he is an enterprise architect and systems engineer working for The Aerospace Corporation, developing solutions for information systems and space systems. Previously he worked as lead systems engineer and architect on airborne and satellite communications networks at Raytheon Systems Company, and worked on wireless telecommunications products and underwater fiber optic transmission products at AT&T Bell Labs. He is author of *Systems Engineering Guidebook*, CRC Press, 1996.



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Establishing Clinical Practice Sites for UTEP Student Internships

Eric Smith, UTEP Student Division Advisor

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.

UTEP's Aditya Akundi, President of the Student Division, together with graduate students Juan Saavedra and Raul Ruiz,

and faculty members Amit Lopes, Oscar Salcedo and student division advisor Eric Smith, visited with Western Refining's Servando Rojas, lead engineer, Mariel Rodriguez of HR, and Cuauhtemoc Benitez, project engineer. The discussion centered around the utility of internships, the high importance of mentorship by practicing engineers, and the value of immersion within a working environment where the application of theory becomes alive.

The visit was part of a broader plan by

the College of Engineering to establish places of practice for engineering students, much like clinical practice is provided to medical students within hospitals attached to medical schools. Establishing clinical sites requires dialog and the seeking of beneficial partnerships, with such linkages now being the de facto standard in engineering education and the job market.

Similar partnerships have already been established with AT&T and Lockheed Martin. ∞

Weigh In On This Year's Tutorials and Monthly Speakers

Ron Lyells, Honeywell Inc.

Your Board of Directors have been busy pursuing various options for this year's tutorial and speaker engagements. Tutorial choices for later this year needs to know [your preferences](#) at https://www.surveymonkey.com/r/Enchant_30Mar2015.

We have many interesting topics that are ranging from systems engineering in a holistic sense to the practical. Some of these include:

- Design Thinking
- Systems Thinking
- Agile Systems & Agile Systems Engineering
- Systems Integration
- Interface Management and Modeling
- Model Based Systems Engineering
- Introduction to Transformational Thinking

This list represents topics that the Board and immediate contacts have expressed as worthwhile to pursue. But we are interested in what comes to mind when you see the terms that are used in the above list or any other related SE topic. We need the dialogue to help us address your needs.

For example when several members were asked what issues do you face with Interface Management what came back was a description of a real world problem:

"The difficulty that seems to be a continual issue; is what interface information content needs to be addressed at each level of system decomposition. From system boundary to eventually system component to component interfaces. Component to component interface management is well understood, but as soon as somebody throws in MBSE or functional analysis/design (e.g., logical design) people understand the theory but have difficulty reducing it to practice."

Some of the feedback we get on Systems Integration leans more towards picking the right strategy for the system architecture or development problem being addressed. And with more teams employing MBSE techniques, what if any impact does that have on system integration strategies, planning, or opportunities for making the whole process more effective and efficient.

So what say you on these topics? We seek the dialogue. Send your thoughts to either Rick Dove (rick.dove@parshift.com) or myself (ron.lyells@honeywell.com). Or voice your thoughts at the monthly chapter meetings. ∞

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>

Registration for the April Albuquerque course is closed. Many others are available. Those close by:

May 11 - 14 | Denver, CO | [Find out more](#) <http://dmmsclick.wiley.com/click.asp?p=24024487&m=91227&u=2388024>

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

All presentations are posted on the [Enchantment Chapter](#) website. A recording of these talks will be posted after the new website goes live in April.

January 14—Jack Ring, INCOSE Fellow, spoke on Modeling Conceptual Design. Semi-retired, he serves as co-founder of Kernen Technologies LLC, co-founder and Managing Member of OntoPilot LLC, and co-founder and managing member of Educe LLC. This session focused on the Model-based Conceptual Design Working Group, particularly their 14 essays in the December 2014 INCOSE INSIGHT. Jack presented his essay regarding the fuzzy front end of conceptual design – identifying and clarifying the real problem – and he facilitated a discussion and scoring of all 14 essays.

February 11—Andy Pickard, Rolls-Royce Associate Fellow in System Engineering and Chartered Engineer, spoke on When “Yes” is the Wrong Answer (best paper award at IS14).

There are many barriers to uptake of

Systems Engineering, including the difficulty of abstract and holistic thinking and project time pressures. Andy focused on the time pressures, and the usual desire to show positive progress in any form of review of a project, resulting in a tendency to say “yes” in answer to a question because we know it is the desired answer.

Inappropriate “yes” statements to questions like “Are the requirements complete?” result in a tendency to stop the pre-work, and start the solution stage prematurely or with false confidence.

This talk spawned an email exchange among chapter members discussing experiences with this tendency, and may become a chapter discussion forum in the future.

March 11—Chris Scrapper, Integration Lead for the Autonomy Investment Area at SPAWAR System Center Pacific Unmanned Systems Group, spoke on the evolutionary system engineering wave model employed to support the S&T management, development, maturation, integration, test, and experimentation of autonomous capabilities.

Chris described how the SE wave

model establishes a continuous improvement process for assessing capabilities and limitations of autonomy, maturing technologies based on key performance parameters, and reducing risk by understanding performance tradeoffs and associated cost as the system evolves. He described how this approach provides a systematic process and overarching strategies for insertion of new technology, accumulation of evidentiary information, and management of risk.

Chris also described its instantiation as the Integration Strategy for ONR Code 30 Autonomy Technology Investment Area.

March 12—Harry Koehnmann, CTO at 321 Gang, and working partner on the Lean Systems Engineering (LSE) extension of Dean Leffingwell’s Scaled Agile Framework (SAFe), previewed the pending rollout of SAFe LSE. This was a joint meeting with the Southern Arizona INCOSE chapter, taking advantage of SOARizona’s Koehnmann booking. Ten Enchantment Chapter members were in attendance, despite the confusion of NM/AZ Mountain Time differences. ∞

Next Meetings *Ann Hodges, Sandia National Labs*

April 8: Design Thinking: What is it and What Does it Mean for Systems Engineering?

Clifford A. Whitcomb, Ph.D. Professor and Chair, Systems Engineering Department, Naval Postgraduate School.

Abstract: 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 d.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 describes Design Thinking in a basic form. The relationship to systems engineering is then explored, particularly as it relates to systems engineering processes and systems thinking. These concepts are then presented in the context of developing systems engineering competencies. Finally, some radical ideas are presented for the education and development of systems engineers into the future..

May 13: NDIA: A Place for Systems Engineers to Move the Needle.

Dr. Beth Wilson, Raytheon Company, Senior Principal Engineering Fellow.

Abstract: The presentation summarizes some of the National Defense Industrial Association (NDIA) Systems Engineering Division (SED) activities. Dr. Wilson is co-chair for the Developmental Test & Evaluation Committee and the Systems Security Engineering Committee, and active in the Modeling and Simulation, Architecture, and Systems of Systems Committees. She champions joint projects between committees and INCOSE. Project summaries will include "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: System Engineering for Software Intensive Projects Using Agile Methods.

Larri Ann Rosser, Sr. Principal Systems Engineer, Raytheon Intelligence, Information and Services.

Abstract: When software development teams apply agile software methodologies, such as Scrum, test driven development and continuous integration, there are challenges in coordination with traditional systems engineering efforts. This talk describes a proposed framework, presented at the 2014 INCOSE Symposium, for cross-functional teams that include Systems Engineers and Software Engineers. The framework aligns agile software development methodology with Systems Engineer roles, with an iterative approach to software development relevant to systems engineering practice that can absorb changes in mission requirements. The framework defines a way to scale from individual agile software teams with a few members to large projects that require a planned architecture and coordinated efforts. ∞



NPS Students Tackle LANL Engineering Problem, Produce a Mission Assurance Support Tool (MAST)

Heidi Hahn, Los Alamos National Lab

Six Navy Lieutenants at the Naval Postgraduate School (NPS) in Monterey, CA spent the Fall and Winter quarters tackling the following design challenge, posed to them by Los Alamos National Lab advisor (and INCOSE Enchantment Chapter BOD member) Heidi Hahn: “Enable engineers and applied scientists who have little or no expertise in systems engineering to tailor and apply LANL’s mission assurance processes (with emphasis on risk-grading, problem definition, and requirements capture and analysis) to R&D projects ranging from design of apparatus for bench experiments to demonstration of an actual system prototype in an operational environment.” The result was a simple tool, called the Mission Assurance Support Tool, or MAST, that guides users through the systems engineering lifecycle and provides a mechanism for documenting requirements, design, and test results.

The students used Design Thinking to guide their development process.

Phase 1 – Gather and Organize. Here they interviewed 11 LANL engineers and engineering managers and developed Vision Statements for each interviewee. An example vision statement is: “An experienced LANL engineer felt frustrated with the lack of fidelity and traceability in LANL projects and hoped to have a system to allow for seamless design with detailed documentation.”

Phase 2 – Define Issues. Here the students combined the information they had received into like-stakeholder groupings, analyzed the needs/wants/desires/goals of each group, and identified any similar threads between groups. They then translated this into “how-might-we statements” such as “How might we create a tool that is applicable to any project and will aid in the design process

and ensure all important factors are being considered?” and used the statements to derive requirements. Derived requirements included that the product must be simple, scalable/tailorable, easy to maintain, and applicable to any project.

Phase 3 – Ideate. Here the students brainstormed multiple solutions to the problem as defined, and considered multiple platforms for creating the tool.

Phase 4 – Build a Prototype. Here the students built a working prototype of a problem definition and requirements capture tool, which they developed as a Word template with built-in user tips.

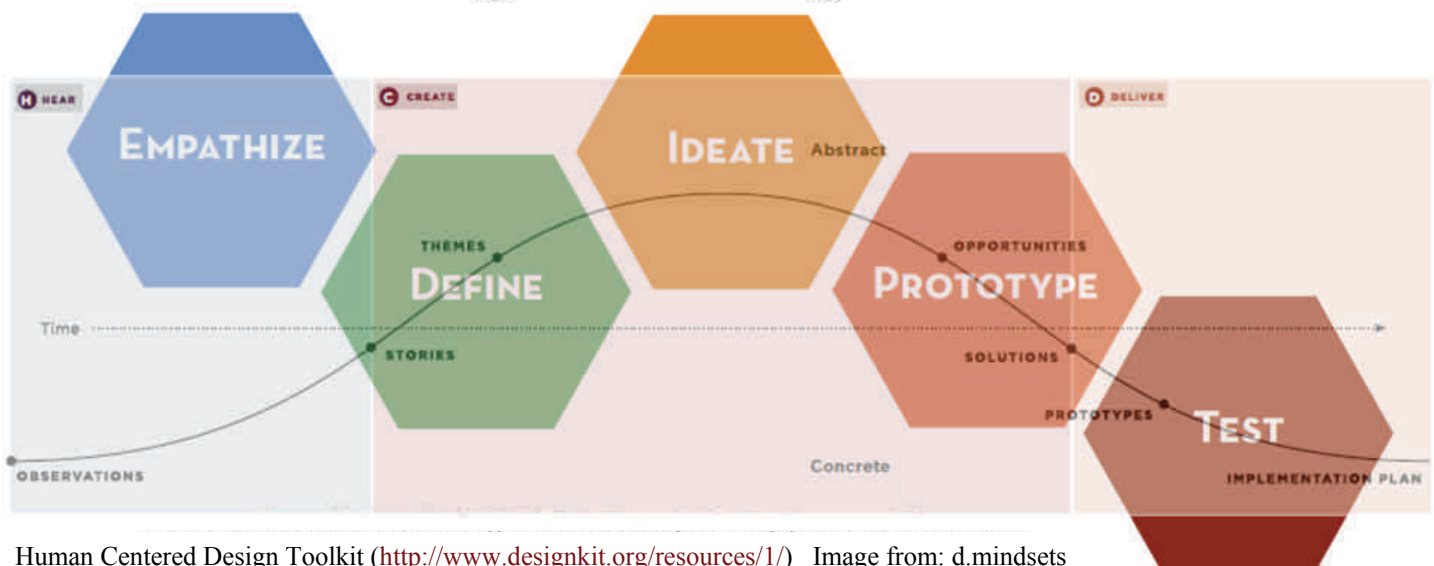
Phase 5 – User Testing. Here the students conducted user testing with LANL stakeholders to refine the prototype into a final product for use by LANL workers.

Alas, Heidi’s involvement in Winter quarter had to be virtual, using the online collaboration tools available at NPS, as her time in residence at NPS had ended and she is now back in Los Alamos. The students traveled to Los Alamos in February and presented a poster documenting their project during LANL’s Engineer’s Week celebration. They unanimously reported that the trip, and the ability to interact face-to-face with the end users of their tool, was the high point of the project!

MAST was recently reviewed by an Engineering Capability Review Panel, comprised of distinguished engineering subject matter experts external to LANL, and not only endorsed but recommended to the Lab Director to be adopted pronto! Bravo Zulu (Navy speak for well done) to the NPS students!

Dr. Cliff Whitcomb, Chair of the Systems Engineering Department and INCOSE Fellow, will give a presentation on Design Thinking to the Enchantment Chapter on April 8 that will highlight the student project. ∞

Design Thinking Process





Chapter Project: Discovering Principles of Embraceable System Design

Rick Dove, Paradigm Shift International

Good system design starts with architecture. So does the built environment: Frank Lloyd Wright was hired first to produce an architecture and design for his famous Falling Water home before a construction crew was even considered. Of course this is true for all built-environment projects, even the prominent majority designed by lesser architects. But this is generally not the case in contracted system engineering. Commercial systems engineering projects have a better track record here, but still abysmal in the large, outside of rare products the likes of iPhone.

What was special about Frank Lloyd Wright—called by many the most important architect of the 20th century? Having studied (some of) his behavior in the design process, and his results, I have some opinions. But they are preliminary, and gleaned from a sample of one—so too early to put up for scrutiny, as I really want to discover fundamental principles true for all embraceable system designs.

Julliard has a reputation for producing many of the best musicians—but musicians are akin to construction workers as opposed to designing architects—a job performed by composers. What does Julliard teach that enables musicians to interpret and perform the works of great composers with fidelity of intent? This, too, interests me. I suspect it is rooted in an appreciation and study of compositional architectures and design intents produced by the great composers—studies that reveal general patterns across great works, employed intuitively thereafter by musicians so schooled. I don't know that this is Julliard's secret sauce, but I suspect employment of this approach would be beneficial to systems engineering, but with a twist.

We consider architects in the built environment and composers in the musical environment to be artists. Artists that stand above others only because they produce systems that are embraced by those that engage in any way with the completed artifact. Artists that do this repeatedly.

Why is there no Julliard of systems engineering schools? Perhaps because we

don't understand the art of systems engineering; art of a quality that causes users to embrace engagement with the system, rather than having engagement be enforced by fiat, or entrapped by the lack of anything better. Cost is not the issue. It takes at least as much time to produce a simply-functional system, and likely much more time, as the design is done by explicit engineering procedure rather than instinct.

I believe that embraceable design would cost less, perform better, and take less time to complete by those skilled in this art. At a personal level the sense of accomplishment would be incomparable.

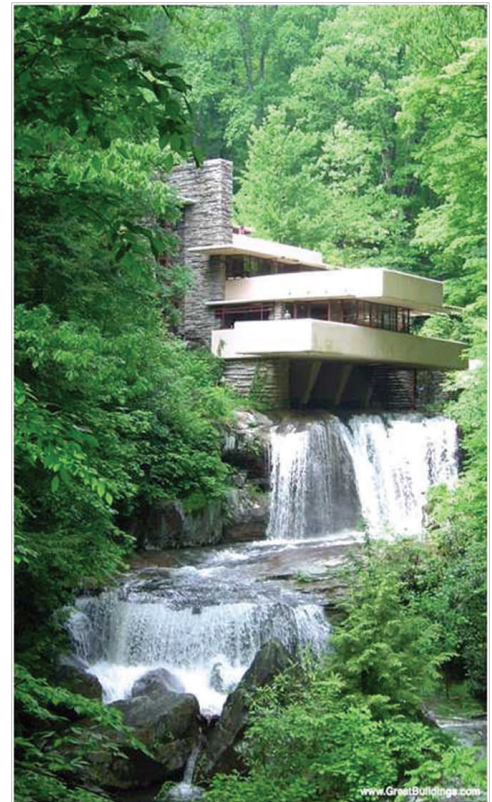
Perhaps we could identify great embraceable systems to study for underlying principles responsible for embraceable results. But I am of the opinion that faster and more meaningful progress toward underlying principles would be revealed in the study of the systems designed in the arts, where true success is measured solely on broad user self-engagement, rather than enforcement or entrapment of engagement.

Project Strategy

Scheduled periodic 60-Minute workshops, once or twice a month, will review architecting in the built environment, industrial design, and related concepts which contribute to embraceable outcomes. We will discuss the relevant lessons from what was reviewed. GlobalMeet will be employed for remote participation.

Videos of short duration, typically 5-30 minutes, will be reviewed, either during workshop or prior to workshop. Relevant articles may substitute for the videos on occasion. The working part of the workshop will be a discussion and capture of what relevant lessons can be gleaned from the reviews. A wiki will be employed to capture and refine over time the lessons from each workshop.

Videos and articles will generally be from fields other than classic systems engineering, where embraceable design is a focus. But we will also review the contributions of Design Thinking, Human Centered Design, and Cognitive System Engineering, after we have an artistic lens to sharpen the focus. The objective is not process and procedure, but rather intuitively



Falling Water (1935), Ohiopyle, Pennsylvania. Still regarded as the greatest 20th Century house ever built.

employable insight.

The theory behind this approach: The capabilities and expressions of our reasoning conscious minds are a function of the patterns embedded in our subconscious mind. Those embedded patterns emerge in our cortical neural nets from hard-wired sense-making mechanisms driven to predict cause and effect relationships. We have no choice in the manner of the mechanism, but we can choose what to expose to the mechanism, and watch the predictions begin. For each of us those predictions will be both constrained and enabled by the preexisting patterns in our personal library – thus, the project is structured for collaborative sense-making.

Join this Project

The first workshop will be scheduled for early May. If you want to be an active part of this, send that indication with preferred workshop days-of-week and times-of-day to dove@parshift.com. ∞



Chapter Membership Demographics

Jeni Turgeon, Sandia National Labs

The Enchantment Chapter Board of Directors held a half day strategic planning retreat in February, and our chapter members were a critical focus of our discussion. More member involvement, member-community interactions, and member professional development are key areas we plan to focus our attention on during the year.

We just completed an analysis of our chapter demographics to better understand who our members are. We have a very diverse group with members from NM, TX, CO, UT, VA, PA, CA, and MA.

From a regional perspective, 77% of our members are from the Albuquerque or surrounding area (meaning about 1 hour's drive from Albuquerque), 14% of our members are from Southern NM and TX, 5% of our members are from Northern

NM, and 4% are from other areas.

Chapter members represent 29 unique companies, with 10 companies having 2 or more employees representing them, and 19 companies with only 1 employee representing the company. Sandia National Labs has the highest representation with 48% of our membership. There is a tie for the next two largest represented groups, Honeywell and AECOM/URS (Holloman AFB), both with 6% of our membership. The University of Texas El Paso has 5% membership in our chapter.

The companies that our membership represents range from extremely small (1 employee) to extremely large (over 5000 employees). While we are still attempting to conduct research into the companies reflected in our membership, it appears that at least 31% of the companies in our chapter are "small" with 500 or fewer employ-

ees, 24% of our companies are "very large" with 3000 or more employees, and the remaining 45% have not yet been classified.

Additional analysis needs to be conducted to better understand the types of companies represented in our chapter, but most do seem to stem, as expected, from defense, aerospace, and engineering types of fields.

We hope to use this analysis to improve our communications with our chapter members, and to provide targeted learning opportunities for professional development where there is an interest. Your individual feedback is sought as well! If you have any feedback on learning opportunities to explore, or on this study and our findings to date, please contact one of the board of directors located at the end of this newsletter. ∞

INCOSE Resilient Systems Working Group Charter

The purpose of the Resilient Systems Working Group (RSWG) is to further the understanding of resilience of human-made systems and to provide a clear description of the principles of resilience within the canon of systems engineering knowledge areas.

The working definition of resilience, as agreed by the RSWG, is that "Resilience is the capability of a system with specific characteristics before, during and after a disruption to absorb the disruption, recover to an acceptable level of performance, and sustain that level for an acceptable period of time."

The goal of the RSWG is to make a measureable impact on resilience at the national and international level. The primary mechanism for this impact is The Infrastructure Security Partnership (TISP). TISP is a consortium of government agencies, universities, private businesses, and professional societies (such as INCOSE). TISP seeks to find ways to make the national infrastructure resilient to terrorist attacks and natural disasters. TISP has direct links to the Department of Homeland Security (DHS) Office of Resilience and the White House Office of Resilience. Two TISP products are in development, and

RSWG members have contributed to their development. One is the Regional Resilience Guide, and the other is the Creating Resilient Infrastructure handbook.

The scope of RSWG recognizes that resilience is an emergent property of complex systems. The attributes of resilience are capacity, flexibility, tolerance, and cohesion. Resilience is implemented through a set of identified heuristics. About 40 of these heuristics have been identified. Hence, the scope of resilience is beyond traditional reductionist systems engineering.

Resilience is not a specialty topic. Reliability and system safety can be considered part of the capacity attribute. Resilience is an over-arching set of design principles intended to enable a system to recover from a disruption. Hence, both analytic and holistic considerations are required for resilience. Analytic capabilities are required to define the capacity attribute. Flexibility, tolerance, and cohesion are more dependent on holistic methods.

The ultimate measure of RSWG success is the publication of guidebooks and standards that instruct local and regional entities on how to achieve resilience in their infrastructure.

Working Group chair is INCOSE Fellow Scott Jackson, an Adjunct Associate Professor at the University of Southern California in the Systems Architecting and Engineering Program where he teaches the principles and practice of systems engineering and the architecting of resilient systems. He is author of the book *Systems Engineering for Commercial Aircraft*, published by Ashgate Publishing Limited in 1997. He is also author of the book *Architecting Resilient Systems: Accident Avoidance and the Survival and Recovery from Disruptions*, published by Wiley in 2009. He has authored numerous papers for INCOSE, AIAA and IEEE.



Scott Jackson

To learn more or inquire about participation in this working group, contact Scott at jackson@burnhamsystems.net.

The information above is taken from the INCOSE website.

All working group charters and points of contact are on the INCOSE website at www.incose.org/about/organization/ti.aspx

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Resources

From TED: Design is in the details, with the small, the personal, the intimate. As a creative director at Ideo, Paul Bennett reminds us that design need not invoke grand gestures or sweeping statements to be successful, but instead can focus on the little things in life, the obvious, the overlooked. Often, it's not the biggest ideas that have the most impact, but the small, the personal, and the intimate. www.ted.com/talks/paul_bennett_finds_design_in_the_details

From TED: Tim Brown calls for Big systems thinking rather than Small functional focus. He says the design profession has a bigger role to play than just creating nifty, fashionable little objects. He calls for a shift to local, collaborative, participatory "design thinking." He starts with the designer of a railroad, the 19th-century design thinker Isambard Kingdom Brunel, who focused on the user experience of floating across the countryside. www.ted.com/talks/tim_brown_urges_designers_to_think_big

From IndieGOGO: Design thinking at its best, intuitively. You're likely not a beekeeper, but this system design is a marvel. "Turn the tap and watch as pure, fresh, clean honey flows right out of the hive and into your jar. No mess, no fuss, no expensive processing equipment and without disturbing the bees. We are excited to introduce our new invention that allows you to enjoy fresh honey straight out of your beehive without opening it. It's far less stress for the bees and much, much easier for the beekeeper." www.indiegogo.com/projects/flow-hive-honey-on-tap-directly-from-your-beehive

New Chapter Members

Ann Hodges, Sandia National Labs

Enchantment Chapter now has 104 active members and student members. We would like to welcome the following new INCOSE members to Enchantment Chapter:

Timothy Conn	AECOM/URS, Holloman AFB
Edward Garcia	AECOM/URS, Holloman AFB
Jeff Godman	AECOM/URS, Holloman AFB
Daniel Sharpes	Air Force Research Lab
Andres Sisneros	AECOM/URS, Holloman AFB
Matthew Vaughn	AECOM/URS, Holloman AFB

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From TED: "Got a wicked problem? First, tell me how you make toast," says Tom Wujec. He shows you why this is an interesting way to start the thinking process. And follows through with details for stimulating innovative thought. www.ted.com/talks/tom_wujec_got_a_wicked_problem_first_tell_me_how_you_make_toast

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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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