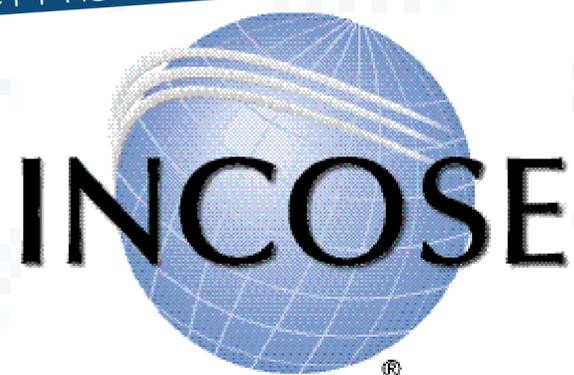


MEMBERS NEWSLETTER

December 2017 - Q4



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President's Corner

Alan D. Harding, alan.harding@incose.org

An End of an Era (well sort of)



Welcome to my final introduction to the INCOSE Newsletter. It is a little less than three months until I hand over the responsibility of the presidency to Garry Roedler at the International Workshop. Milestones are great opportunities for reflection on what went well, what could have been even better, and how as individuals how we grew along the way. I would like to say a bit about this here, and will be saying more at the International Workshop (IW) in January.

INCOSE leadership is like a relay race; each of us brings our own perspective and enthusiasms to the role, passes on the baton, and the team journey towards our goal continues. When I stood for election in the autumn of 2013, my theme was “an inclusive INCOSE,” with focus in two areas: becoming an increasingly global organisation, and continuing to make our operations more business-like. Much has happened in the last two years and, overall, I believe that we are moving in the right direction.

Listed below are a wide range of changes that continue to globalize aspects of INCOSE:

- We have updated the INCOSE vision and mission to reflect our ambitious global view, and to include all systems approaches, not just systems engineering.
- We have already published three translations of “The Systems Engineering Handbook, 4th Edition,” with more in progress.
- We are rolling out improved policies for chapters that make good practice clear, reduce financial risk, and make finances fairer for chapters who manage their own membership.
- We have updated the list of countries where individual membership is discounted due to lower economic conditions.
- We are introducing associate memberships for employees, students, and faculty of the Corporate Advisory Board and academic council organisations, and will promote pathways for them to become full members.

Below are steps we have taken along our way to become increasingly business-like:

- We have appointed a Director for Strategic Integration, Chief of Staff, and Project Managers for our strategic initiatives to support the board in growing and evolving INCOSE.
- We have moved to a value stream model to increase non-membership income so we are more financially sustainable and have more to invest in our strategic priorities.
- The INCOSE store has been rebuilt, and through our impactful products initiative we are adding new products, including recently, “The Complexity Primer, Guide to Writing Requirements,” and the book, “Integrating Project Management and Systems Engineering: Methods, Tools and Organizational Systems for Improving Performance,” by Eric Rebentisch.
- MARCOM (Marketing and Communications) is making a real difference in how we project ourselves professionally and consistently. Our logo and branding is now clean and distinctive, an update to www.incose.org is imminent, and our use of social media is maturing.



INCOSE leadership Past, Present and Future in Edinburgh – David Long, Alan Harding, and Garry Roedler



Speaking at AOSSEC, Bangalore, India



Addressing the NASA/JPL Symposium, Pasadena, US-CA

Rachel LeBlanc, marcom@incose.org

So how do I feel about my term of office? Well, the INCOSE presidency is a privilege and a rare opportunity for service, personal growth, and a chance to make a difference. There have been some real highlights, including being the first INCOSE president to attend an event in India (AOSEC17), the International Symposium 2017 in Edinburgh, and the NASA Jet Propulsion Laboratory Symposium in Pasadena, US - CA. As with everything, there has been a lot of routine work, some frustrations, some completely unexpected topics, and the ongoing challenge of making time for INCOSE while holding down a demanding day job. I do not think I would have missed it for the world, but equally I am looking forward to the feeling of a job completed and the luxury of looking ahead and knowing I will have more choice about where I am involved with INCOSE ... rather than being involved in everything!

INCOSE Beijing

In my last overseas visit as INCOSE president, I was delighted to make a second visit to Beijing, CN to meet with the Beijing chapter leadership, CAB member Aviation Industry Corporation of China, Academic Council member Tsinghua University, and the State Key Lab of Management and Control for Complex Systems.

It was great to hear how the chapter is evolving, plans for their second Beijing Systems Summit (2018), and how systems engineering certification is a core part of the chapter's growth strategy. Courtney Wright, INCOSE certification project manager, was also on the trip, and hosted a certification exam while we were there. This provided a great way to enable people to test their knowledge of systems engineering against "The Systems Engineering Handbook, 4th Edition" and the major stepping stone to certification at Associate Systems Engineering Professional (ASEP) and Certified Systems Engineering Professional (CSEP) levels.

I look forward to returning to Beijing soon, hopefully to be a part of next year's summit.



Photo 1: Outside the Qing Dynasty Old Gate of Tsinghua University (1909, rebuilt 1991)



Photo 2: Meeting a robot fish at the State Key Lab of Management and Control for Complex Systems – a challenge to look presidential

The Quarter 4 (Q4) Board of Directors (BOD) meeting took place in Orlando, US- FL. It provided the board with a wonderful opportunity to meet with members of the local chapter. The board also covered a lot of INCOSE business during the two and a half day intensive meeting schedule.

The board received and approved a finalized proposal at the Q4 BOD meeting for the Chapter Governance and Finance Model (CGFM). The board will communicate any changes under development associated with this model to the chapters. The board is confident that the changes are consistent with our values and principles and will allow us to achieve financial sustainability at central and local levels. A big thank you to those involved in making these changes possible by dedicating a tremendous amount of time in preparation.

The board reviewed strategic plans for the INCOSE value streams at the board meeting prior to budget discussions to ensure that we are aligning investments with our strategic priorities. We will continue to evaluate and measure these on-going efforts.

The BODs made the decision to host the 2019 International Symposium in Orlando, US-FL. We look forward to starting our planning efforts for that symposium while planning for the International Symposium 2018, taking place in Washington, US-DC, already in full swing!

2017 Election Results

Danielle DeRoche, dani@univmgmt.com

The Nominations & Election Committee is pleased to announce the results of the 2017 INCOSE elections. A sincere thank you to all members who voted. The elected individuals will join the INCOSE Board of Directors on Saturday, the 20th of January 2018 when they are installed during the opening plenary of the 2018 International Workshop in Jacksonville, US-FL.

Position (Term of Office)

- President-Elect (2 years before becoming INCOSE President for 2020 and 2021): Kerry Lunney
- Treasurer (2 years): René Oosthuizen
- Chief Information Officer (3 years): Bill Chown
- Director for Outreach (3 years): Gina Guillaume-Joseph
- Director for Asia-Oceania (3 years): Serge Landry

Congratulations to our new officers and directors!

Sector Updates - Americas

Contributed by Antony Williams,
antony.williams@jacobs.com

This quarter, we highlight a couple of areas where great things are happening in the Americas :

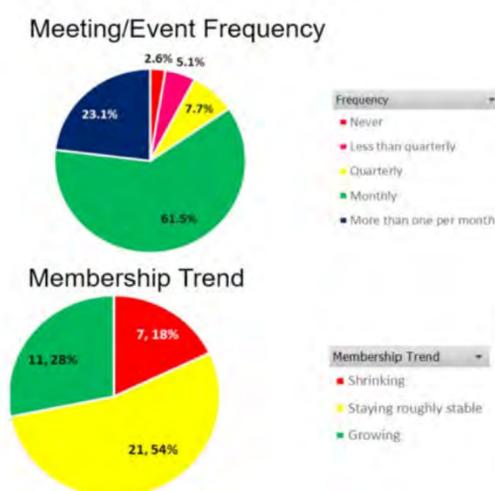
The Americas Sector Stakeholder Survey

The Americas Sector is quite diverse, with the resulting diversity of issues, concerns, and successes. To help understand the sector better, and to leverage our strengths against our needs, our the Americas Sector Deputy Director, Kevin Weinstein developed and executed a short Survey Monkey instrument. We had good participation: 39 responses from 21 chapters.

One interesting survey finding noted that some chapters highlighted strengths in the same areas, where other chapters identified needs. This prompted us to establish chapter pairings between chapters that were interested in similar topics such as member retention, hosting regional conferences, or finding speakers for chapter events so that

chapters could help each other and share best practices. We can then promulgate these practices throughout the sector and, where pertinent, throughout the organization.

Kevin's assessment of the survey results is posted [here](#) at our [Americas Connect Site](#).



Sample Results from Stakeholder Survey

Notable Events

Over the last quarter, the Americas Sector hosted several truly notable events, such as the Enchantment Chapter October Systems Summit and the Systems Engineering Professional (SEP) Exam.

The Enchantment Chapter (New Mexico, US-NM and El Paso, US-TX) with co-sponsor New Mexico Tech held the second Socorro Systems Summit on the 6th and 7th of October 6, in Socorro, US-NM, with 51 registrations. They held a written SEP exam the evening of the 5th of October, with 23 exam-takers.

The Systems Summit holds collaborative exchange workshops on key systems engineering issues in need of more attention. At a regional level the principle objective is professional development through exposure to a multi-perspective collaborative experience, networking with a broad cross section of the systems engineering community, and attention to problem space definition and barriers to organizational and personal attention independent of potential solution avenues.

The 2017 Socorro Systems Summit featured Anne O'Neil as keynote speaker, and eight workshop topics. Participants could attend introductions to four topics the first day, and then collaborate more deeply on two topics the second day. Topics to choose from were:

- How can systems engineering accept the need to enable and facilitate agile security, adaptable to adversary attack?
- How can fail-fast rapid innovation concepts be appreciated and employed?
- What blocks and enables integrating project management and systems engineering?
- How can systems engineering operate as a multidiscipline enabler, art, and science?
- What are the organizational challenges and opportunities for transforming to a systems engineering culture?
- What impedes and promotes attention to upfront and in-process problem-space risk characterization?
- What prevents and enables high performance teaming?
- What are infrastructure needs to enable Quick Reaction Capability (QRC) (satisfying urgent needs effectively)?

You can find full event details with proceedings at www.incose.org/enchantment under the Library tab.



A glimpse into the Socorro Systems Summit

Great Lakes Regional Conference

The chapters of the INCOSE Great Lakes Region collaborated to present 11th Annual INCOSE Great Lakes Regional Conference (GLRC11). GLRC11 featured important topics from critical sectors such as aerospace, agriculture, automotive, biomedical and healthcare, defense, education, energy, government, information infrastructure, safety and security, space, and transportation.

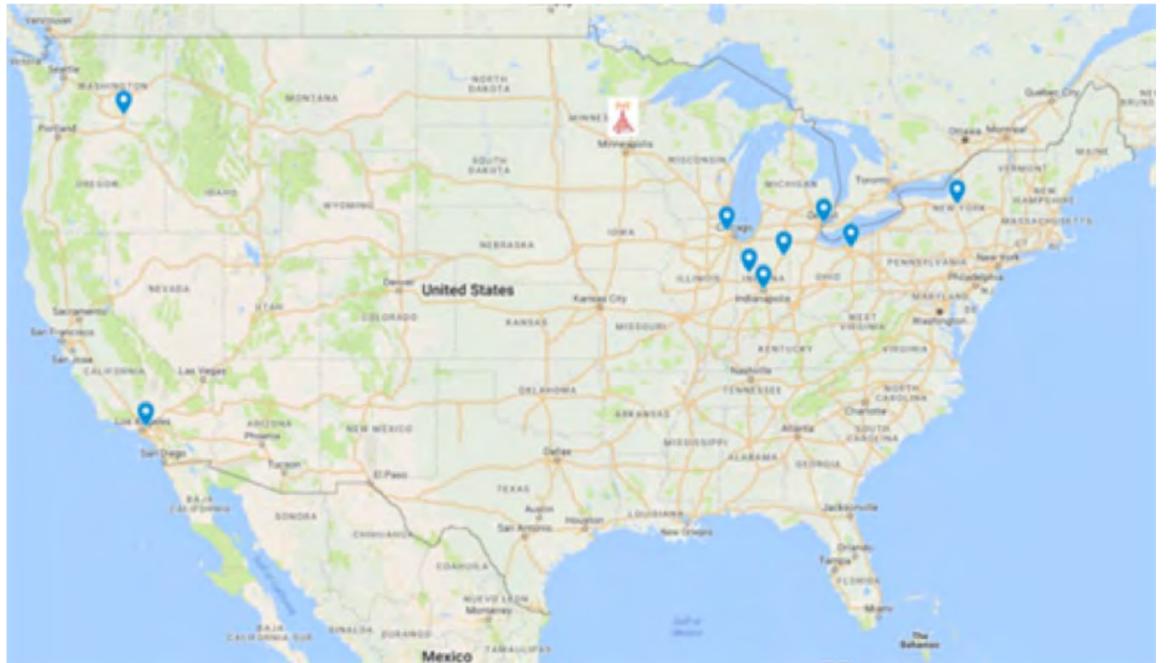
Based on the success of the GLRC10, GLRC11 again featured an INCOSE Systems Engineering Professional Development Day (SE-PDD). The SE-PDD provided a virtual extension of the conference, with the featured sessions broadcast from Minnesota to several satellite sites.

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GLRC 10 included:

- 5 keynote and featured speakers
- 29 technical presentations
- 3 panel sessions
- 5 tutorials
- Full-day systems literacy workshop
- An opportunity to take the INCOSE CSEP/ASEP Exam (free for GLRC11 attendees!)
- STEM demonstrations
- Sponsors and exhibitors showcasing products and services
- Region-wide systems engineering professional development day (9 satellite sites across the USA)



GLRC11 Live broadcast from Twin Cities nationwide

Los Angeles Chapter

Phyllis Marbach, prmarbach@gmail.com

INCOSE-LA Systems Engineering Handbook Weekly Training

The INCOSE Training Working Group and the INCOSE Los Angeles Chapter are presenting INCOSE Systems Engineering Handbook v4.0 free training webinars for all INCOSE members and employees of INCOSE CAB organizations. This weekly series began on Thursday, the 5th of October 2017, and will run through April 2018. The training starts at a specific time US. John Clark created and recorded these webinars when he presented the course in 2015-2016. Course materials include the shared documents, tutorial slides, questions, and audio and video recordings for downloading and using at your convenience. Individuals that join the sessions after it has started will need to catch up on their own. Most slides contain speaker notes in the PowerPoint notes view. Phyllis Marbach, current president of INCOSE-LA, will be facilitating the sessions. Phyllis will collect questions and reach out to our Systems Engineering Professional (ESEP/CSEP/ASEP) community within INCOSE-LA for answers to those questions. The trainings are on Thursday evenings through the end of January. After that, they will be on both Wednesday and Thursday evenings to enable completion on all 34 sessions by the end of April 2018. One or more CSEP/ASEP paper testings will be hosted for those wanting to sit for the exam in May 2018. Dates and locations will be announced at a later date. Contact prmarbach@gmail.com with any questions.

INCOSE LA Happenings

Christopher Alain Jones, of Dassault Systems, spoke on the 8th of August about “The 3D-Experience Platform for Systems Engineering” at The Aerospace Corporation. September 12, Kay Das spoke about “The Connected Vehicle Revolution.” “A Systems Engineering Solution to Clean up the Oceans” was presented by Phyllis Marbach on the 10th of October at The Aerospace Corporation to INCOSE-LA members and guests. This presentation was the final report from the Practitioner’s Challenge from the International Symposium (IS) 2017 in which Phyllis participated. the 14th of November’s speaker was Ryan Noguchi, director of the space architecture department in the systems engineering division at The Aerospace Corporation. Ryan presented “Best Practices and Lessons Learned” from MBSE Pilot Programs.”

Members will enjoy a holiday party at the Del Rey Yacht Club for the fourth time, thanks to the hospitality of Yacht Club member Bo Oppenheim, INCOSE fellow. Fireworks and a lighted boat parade will start the festivities, followed by a buffet dinner and entertainment.

The LA chapter offered several educational tutorials to our members during this last quarter of the year. The 30th of September the systems security engineering tutorial was held at The Mitre Corporation in El Segundo, US-CA. We were fortunate to have author and instructor Dr. Mark Winstead, of Mitre, present this tutorial at the 27th Annual INCOSE IS in Adelaide, Australia. On the 13th of October, the chapter participated as a remote site in the Systems Engineering Professional

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Development Day hosted by the Great Lakes Regional Conference. Several top-notch presentations ranging from systems engineering standards and processes to current model-based systems engineering applications and transformational opportunities were shared with our members assembled at Caltech. Thanks go to event organizer, Gary Houchin-Miller and to our host Rick Hefner, member of the Caltech Center for Technology and Management Education for the Pasadena venue.

Caltech in Pasadena, US-CA was also the site of our systems thinking tutorial on the 14th of October from Rick Hefner. This was followed by a systems thinking roundtable where each of the approximately 20 assembled described in 2 minutes or less what they thought systems thinking was and where it could be applied to benefit humanity. Thanks go to Sue Gabriele for facilitating the roundtable. Based on the discussion, the group broke into smaller groups to discuss more detail about applying systems thinking in four areas: homelessness, creativity, complexity, and everybody as a systems thinker. The 18th of November concluded our systems engineering education events for the year with a model based systems engineering tutorial taught by Dr. Mark McKelvin, an engineering specialist in systems and software engineering at the Aerospace Corporation. INCOSE-LA is grateful to all the esteemed instructors and facilitators that made these educational events possible.

We are looking forward to 2018 which will begin the 9th of January with our annual town hall to induct the new officers and survey the members to determine how we best serve them. We are currently lining up speakers for our meetings usually held on the second Tuesday of each month at The Aerospace Corporation in El Segundo, US-CA. Registration for these events and updates will be available on our website, www.incose.org/los-angeles.

SOAR Chapter

From the 30th September – 1st October 2017, INCOSE SOAR sponsored a 2-day class on “Model-Based Systems Engineering (MBSE) with Systems Modeling Language (SysML)” at the Westward Look Resort in Tucson, US-AZ. Sanford Friedenthal, who taught the class, is co-author of *A Practical Guide to SysML* and leader of several SysML and systems engineering working groups at the Object Management Group (OMG). Twenty-five individuals participated in the class, ranging from university students to experienced industry professionals. The class attracted participants from Tucson and Phoenix, US-AZ, and Albuquerque, US-NM. Feedback from the post-class survey indicated that most participants felt that the class was either relevant or extremely relevant to their roles, that the presentation of the information was either very clear or extremely clear, and that the value of the class for the price was mostly excellent or very good. The chapter is interested in obtaining your topic suggestions for future workshops.

2018 INCOSE Western States Regional Conference (WSRC)

Planning is already underway with the intent for the Seattle Chapter to host the 2018 INCOSE WSRC on the 20-22 September 2018, in Seattle, US-WA. This conference will build upon the successful 2016 Western Regional Conference held in Los Angeles, California. The proposal is to model this conference after the recently concluded Great Lakes Regional

Conference which was organized by Paul White, now president of the INCOSE Wasatch Chapter. We are hoping to get as many chapters from the Western Region on board as possible. Contact Paul White to get involved at pablow01@yahoo.com.

Emerging Chapters

South Florida

We had great speakers this year. Leveraging a strategy of canvassing the INCOSE Fellows for excellent presentations, we enjoyed an excellent response from the INCOSE Fellows and had great presentations from Eric Honour, Bo Oppenheim, David Long, Dave Walden, Lenny Deligatti, Rick Steiner, and Cliff Whitcomb. Because our area is so large, our meetings typically occur though web meetings. This allowed all of the mentioned speakers to participate. We are currently focused on continuing to grow our chapter and created a LinkedIn page where we promote our meetings with the goal of being able to meet the number of minimum attendees necessary to approve the bylaws and elect officers. In the future, we would love to continue to work with the INCOSE Fellows and use their services to provide seminars and other similar learning experiences for our members.

Canada

At the emerging Canada Chapter, we focused on 10 action areas:

1. Holding annual conferences with keynote speakers and technical tracks
2. Holding quarterly, theme-based technical sessions
3. Being responsive to INCOSE direction and strategy
4. Growing membership
5. Developing and maintaining a

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relationship with government, industry, and academic bodies with interest in systems engineering

6. Working with academia to start or expand systems engineering and systems thinking into their engineering programs
7. Promoting INCOSE's wealth of systems engineering knowledge for the benefit of members, government, industry, and academia
8. Taking opportunities ourselves or with partners to foster systems approaches to meet future challenges
9. Being a clearing house for systems engineering expertise in Canada
10. Encouraging chapter members to become active in INCOSE International Working Groups

INCOSE Emerald Coast Chapter

After a 7+ year hiatus, the Emerald Coast Chapter rebooted and is now planning to serve INCOSE members along the Florida Gulf coast area. This chapter has the envious geographic reach from Pensacola to Panama City (and points beyond), including Destin and Fort Walton Beach. Within this range is Eglin Air Force Base (the world's largest USAF base) and the prodigious Pensacola Naval Air Station, ensuring that there will be large defense programs contingent among the chapter's membership. Add in the large group of contractor companies and support organizations, and the Emerald Coast Chapter is poised to be a major player for INCOSE and the systems engineering community.

The chapter held elections on 19th October for interim officers; those elected are:

- President -- Terry Kuykendall
- Vice President -- Lori Zipes
- Secretary -- Michael Huelsbeck
- Treasurer -- Garrett Leavitt
- Programs Chair -- Lori Zipes (dual role)
- Communications Chair -- Holly Gardner

The near-term plans for the chapter restart include: holding an election for 2018 board members, restarting the chapter website and social media, and polling the INCOSE members within the chapter's geographic range to determine preferences and suggestions for future presentations and activities.



INCOSE Emerald Coast Board members (L to R): Holly Gardner, Lori Zipes, Terry Kuykendall, and Michael Huelsbeck (not pictured: Garrett Leavitt)

Asia-Oceania *Beijing Chapter*

Contributed by : Chang Chuangye, chychang@yeah.net



On the 7th of November 2017, INCOSE Beijing Chapter leadership met with INCOSE President Mr. Alan Harding and INCOSE Certification Program Manager Ms. Courtney Wright in Beijing. During the meeting, INCOSE Beijing Chapter presented the chapter's vision, goals, organization, charter, capabilities, and reviewed the progress in INCOSE training and certification. Alan discussed the revised chapter operation guidelines with the chapter leadership, and outlined systems engineering trends for the future.



INCOSE systems engineering certification knowledge exam held in Beijing

Towards encouraging and promoting systems engineering certification, INCOSE Beijing Chapter organized a Systems Engineering Professional (SEP) certification knowledge exam on paper. The paper exam has the same format as the standard knowledge exam offered at Prometric Testing Centers, with 120 multiple-choice questions in 120 minutes. The exam was held in Tsinghua University on the 9th of November 2017, under the supervision of Ms. Courtney Wright, INCOSE Certification Program Manager. Thirty candidates took the exam.

Eric Rebentisch, Editor-in-Chief

Integrating Program Management and Systems Engineering

Methods, Tools,
and Organizational Systems
for Improving Performance



WILEY

Sector Updates

Asia-Oceania

India Chapter

India Chapter Elections and New Members

The India Chapter held elections for the selection of the new India Chapter committee. Following is the list of new office bearers (2017-19).

- Stueti Gupta: President
- Nikhil Joshi: Secretary
- Harish Jairaj: Treasurer
- Geetika Purohit: Programs Officer
- Priyasloka Arya: Assistant Programs Officer
- Ankit Raj Mathur: Assistant Programs Officer
- Shailesh Patil: Development Officer
- Anandvijay Nimkar: Awards Officer
- Prasanna Ramamurthy: Membership Officer
- Swarupanand Sewalkar: Communications Officer

Asia Oceania Sector Logo Contest – Winner from India Chapter

INCOSE Asia Oceania Sector (AOSEC) conducted a competition for the design of the new logo of AOSEC. AOSEC, previously known as APCOSEC, is the flagship conference conducted by the INCOSE Asia Oceania Sector. The criteria for logo selection were:

- **Relevance:** The entry should be consistent with INCOSE goals and values, and should signify the Asia Oceania Sector.
- **Originality:** The entry should be a creative, innovative, original work of the artist entering the contest.
- **Aesthetic quality:** The entry should command attention, display visual balance and color coordination, and contain elements which work together for a unified and appealing design.

Oceania Sector Chapter Presidents evaluated the entries. They selected the design from Hari Prasad Devarapalli from India as the best entry. The prize for the winning design is a one-year complementary membership to INCOSE. INCOSE marketing communications subsequently worked on the design with respect to coloring and layout, and finalized the logo.

The letter O in the design represents a system and its boundary, while the letter A differentiates the composition of system parts and suggests the seamless integration of parts. The legs of the A represent interfaces with the external universe or other systems. This is the essence of engineering; for the system to act as a whole. The



The new AOSEC logo - Logo Concept Details (as Envisioned by Hari Prasad Devarapalli)

letters A and O together represent a living organization of collaboration and co-creation of all the participating chapters. Additionally, the A and O together also resemble a smiley face, where the legs indicate agility, dynamism, mobility, and flexibility.

About Hari Prasad Devarapalli

Hari is the head of Corporate Industry Forums and Standards Cell in Tata Consultancy Services. He has more than 25 years of experience in teaching, industry, and research. His current focus is to promote organizational culture for collaboration and co-creation of transformational capabilities and assets. His interests are design thinking and software engineering in artificial intelligence and machine learning. Recently, he has successfully completed the INCOSE Technical Leadership Cohort.

India Architecture Working Group Efforts for ISO 42020

The INCOSE India Architecture Working Group, led by R. Anand, contributed over 78 review comments for the ISO 42020 Enterprise, Systems and Software Architecture Processes standard. The DIS National Ballot cleared ISO 42020 with 90% votes, and will soon publish it as an international standard. The working group will also be involved in review of upcoming ISO 42030, a new emerging standard on architecture evaluation. R. Anand is now the Co-Chair for INCOSE Architecture Working Group.

Australia-Systems Engineering Society of Australia (SESA) Report

Bill Parkins, president-elect@sesa.org.au

Australian Systems Engineering Workshop (ASEW)

The Systems Engineering Society of Australia (SESA), the Australia Chapter of INCOSE, conducted the Australian Systems Engineering Workshop (ASEW) in Brisbane from Monday the 30th of October to Tuesday the 31st of October 2017 in the Marriott Hotel, Brisbane, AU.

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Asia-Oceania

<http://www.asew.com.au/>. ASEW is a key technical event in our systems engineering calendar which provides an opportunity for all participants to further develop techniques for advancing the practice of systems engineering in Australia.



Workshop layout designed to encourage and facilitate group interactions

Fifty-five people registered for ASEW, with a high percentage from the transportation sector and an ongoing attendance and contribution from the defence sector. The program summary, by sector was as follows:

Defence

- Workshop: First Principles Review – Where Are We Now In Systems Engineering?
- Tutorial: Modelling for Conceptual Design
- Workshop: Modelling Across the Contract Boundary
- Workshop: Effective Systems Engineering and Project Management Integration
- Workshop: Decision Making in Complex Systems

Telecommunications

- Workshop: Software – Defined Network Case Study
- Keynote: Telecoms – Security

Transport

- Keynote: Transport for NSW on the Parramatta Light Rail
- Presentation: Inland Rail Project Management, Benefits and Risks
- Workshop: SMART vs SMARTISH Requirements
- Panel: Implementation of Systems Engineering on Transport Projects
- Roundtable: Systems Engineering for Connected and Autonomous Vehicles
- Keynote: QLD Connected and Autonomous Vehicles Initiative



Jonathan Luey and Malaeka Nadeem deliver keynote speeches on transport at ASEW

Other

- Working Group Meeting: Software Systems Interface Working Group
- Workshop: Systems Summit on Critical Problem Definitions
- Tutorial & Workshop: Decision Analysis and Lifecycle
- Tutorial: Systems Engineering and Modelling Simulation
- INCOSE Knowledge Exam

Feedback from attendees was very positive, which confirms the value of the workshop format for providing a forum for professional collaboration, ongoing learning at all levels of experience, and social interaction with people with a common interest.



Congratulations to our SESA Technical Director, Charles Homes, for developing and executing an excellent program and to Kristen Smith from Engineers Australia Brisbane office for managing the event for SESA.

Emerging Thailand Chapter

Vorachet Jaroensawas, vorachet@gmail.com

The emerging INCOSE Thailand Chapter organized a chapter meeting on 30 September 2017 at the King Mongkut's Institute of Technology (KMITL) in Bangkok, TH. Participants from the industry as well as academia attended the meeting. Vorachet Jaroensawas,

Sector Updates

Asia-Oceania



coordinator of the emerging chapter, provided an introduction of INCOSE to the participants, covering various topics such as INCOSE products and publications, working groups, and events. The meeting participants held discussions on how to develop the emerging chapter and promote awareness of systems engineering in Thailand. The chapter also rolled out a survey to understand the topics of interest and preferred participation opportunities. The preliminary website of the emerging chapter has been setup at <https://sites.google.com/site/incosethailandchapter/home>.

INCOSE Norway - NORSEC ALSSE Seminar

Cecilia Haskins, cecilia.haskins@incose.org

NorSec held their annual Air, Land and Sea Systems Engineering (ALSSE) seminar on the 23rd of October covering topics from agile incremental delivery of benefits to artificial intelligence at the service of requirements management. After a warm welcome from NorSec President Kirsten Helle, Tom Gilb opened with his clear message on the value of quantification of requirements to remove ambiguity from specifications. These requirements emanate from a rich variety of stakeholders, who include more than people, and provide the rationale for identifying risk and priorities. He stressed the difference between a wish, or fantasy, and a goal, or promise, in value planning.

Two speakers from Jotne Information Technology were next to present updates on research and related advancements taking place in Norway, and a project underway in cooperation with Lockheed Martin. Jotne is well known for its work with standards to support tool integration. Kjell Bengtsson and Jochen Haenisch reported on improved confidence with smarter integration of simulation and test data, and interim results from the Crystal and Idealism projects, respectively. One more year remains on these projects and we look forward to a final report next year.

After lunch, hosted by IBM, which also provided our excellent facilities, we heard from Maria Ericsson of IBM on Digital Twins. Most of us in the room were, and probably still are, novices on this subject, and Maria provided a very clear and well-illustrated introduction. Up next was Antoine Rauzy, who built on his presentation from the previous year to delve further into robust model-based systems engineering and model synchronization across analysis domains. The day concluded with Luca Piciaccia who presented results from his PhD research on the application of artificial intelligence to streamline the selection of relevant requirements from standards and other source documents when preparing a system specification. And so, the day ended where it began, and the audience was content. NorSec will again sponsor the upcoming KSEE 2018 in June on the topic of digital transformations and big data.



Registration is now open!

www.incose.org/IW2018/registration

Nordic Systems Engineering Tour

Empowering the North – From Helsinki via Stockholm and Copenhagen to Hamburg and Warsaw



Join us as a Presenter or Attendee for the 6th Annual INCOSE Nordic Systems Engineering Tour (NOSE), the 23-27 of April, 2018. This is a 5-stop Systems Engineering event sponsored by the German, Swedish, Danish, Finnish, and Polish chapters of INCOSE.

SUPPORTERS NOSE 2018

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NOSE 2018 Call for Presenters (CfP)

The objective is to create a program that contains a balanced mix of talks addressing both general and local systems engineering challenges. We prefer talks addressing current systems engineering trends like:

- Systems Engineering in the context of Cyber-physical system
- Systems Engineering Management
- Lean and Agile Systems Engineering
- Safety and Security

For the NoSE 2018 event we are looking for:

- **Tour speakers:** As a tour speaker, you will have a 45 minutes' slot for delivering your talk at each of the venues. For example, a tour speaker is expected to deliver the talks at all five stops at the tour. The topic of this kind of talk should be of interest to the audience of all five venues.
- **Part-time Tour speakers:** A full week of traveling is difficult to combine with other obligations in life. When submitting, a speaker may indicate a willingness to speak at multiple, but not all tour stops.
- **Local speaker:** As a local speaker, you will have a 30-45 minutes slot and can propose a shorter talk which will only be delivered to the venue of your choice. The topic may have a local or general interest.

Academic News

From The Academic Council of INCOSE

Thomas F. Gannon, tgannon@wpi.edu

Assistant Director for Academic Communications

Activities with the American Society of Engineering Education (ASEE)

Alice F. Squires, alice.squires@wsu.edu

Assistant Director for the Americas

INCOSE continues to collaborate with the American Society of Engineering Education (ASEE) by planning systems engineering education-focused events to support INCOSE's strategic objective related to education. The world widely adopted INCOSE curricular recommendations, raising the quality of engineering education. Plans are in the works for the 125th Annual Conference & Exposition, 24-27 of June 2018, in Salt Lake City, US -UT, which include the following:

1. An INCOSE sponsored certification exam workshop to allow systems engineering educators and students to complete a free beta test of the INCOSE certification exam
2. A faculty panel titled: Investigating Approaches to Advance Knowledge and Maturity in Systems Engineering with Moderator: Alice Squires (WSU) and Panelists: Alejandro Salado (VA Tech), Jon Wade (Stevens), Tom McDermott (Georgia Tech), Radu Babiceanu (ERAU), and Federica Robinson-Bryant (ERAU)

We received input from many members of the community, but asked for broader input from industry, government, and academia to rank the initiatives that ASEE and INCOSE consider for a special interest group focus on systems engineering education.

Please take 3 minutes (average completion time) to complete the one-page survey:

<https://www.surveymonkey.com/r/ASEEandINCOSEsurvey> and optionally suggest an initiative of your own.

Please send any input, feedback, or questions related to ASEE or Sector I (North and South America) activities and events, to alice.squires@wsu.edu.

INCOSE Foundation

John Snoderly, foundation@incose.org

In 2017, the INCOSE Foundation awarded grants to 11 INCOSE chapters and working groups. Donations to the INCOSE Foundation provide the grants that make the activities of these eleven possible and we are very glad to be able to support them.

We would like to thank the members who have made this possible with donations over the years, and we want to share with you the work you are helping to underwrite. We are also asking you to consider sending a gift this year so we may be able to continue this kind of support and deepen our bond within INCOSE overall.

The foundation for the past several years, awards grants and scholarships in partnership with the Johns Hopkins University, the Stevens Institute, the James E. Long Fellowship, the David Wright Award, the Chesapeake Chapter, and the International Science and Engineering Fair (ISEF). In addition, The INCOSE Foundation supports selected projects such as Body of Knowledge and Curriculum to Advance Systems Engineering (BKCASE) and the publication of *Vision 2025*.

A major goal for the round of grants summarized below is to make all INCOSE members aware of the excellent work being done across the organization and to encourage

support from members for the work you are all doing. We want you to find inspiration in this list and consider making your gift to the foundation today. A gift to the general fund will ensure that we can make discretionary grants in the future.

- *Greatest Young Systems Engineer of the Year Challenge*: Competitors are given a systems engineering challenge, systems engineering process training, and model-based systems engineering tool training. Winners received a prize at the annual 2017 INCOSE South Africa Conference.
- *STEM Program in Indianapolis Inner City Schools*: This is a collaboration between the INCOSE Crossroads of America Chapter and the 100 Black Men of Indianapolis organization. Three grade groups participate. The grant includes studying: evolution of a system model, capturing the overall architecture, identifying key interfaces, and establishing the control means and functional behavior of the energy microgrid in select counties of Cayuga, US-OH, funded by the INCOSE Power and Energy working group (WG)
- *Systems Processes Theory & Systems Pathology*: The recipient of this grant will compile how systems work and do not work into one systems engineering organized and useful relational database, allowing multiple searches by systems engineering engineers, in the pursuit of systems mimicry and practical application
- *Initiation of a New Professional Society: International Society for Systems Pathology (ISSP)*: This grant funds a new professional society that unifies many different systems approaches to how systems fail to better inform systems engineering design and delivery. This grant is funded by the SSWG (Systems Science WG) and NSWG (Natural Systems and Complex Systems WG) This grant hopes to promote the systems engineering approach in Poland and promotion of the INCOSE Polish Chapter in different societies in Poland.

INCOSE Foundation

- *Starshine Academy Beta Test of the SySTEM Educator Initialization Material and Method*: This effort focuses not on the students, but on preparing educators to create excellent learning environments for youth, ages 5 through 16. Educator Initialization detects those who can get beyond teaching to serve as leaders of learning about STEM and systems, then encourages them to become an autonomous community of continuous innovation for promulgating the education. Jack Ring leads this project.

Software Traceable API Standards: This grant aims to develop a process that can be repeated to produce traceable requirements from American Petroleum Institute (API) standard(s) using software tools and the holistic requirements model. The project goal is to pioneer and transform an oil and gas (O & G) industry standard to a requirements holistic model compatible systems software module.

As INCOSE UK grows, so does our responsibility to members to deliver a professional capability that is based on solid systems engineering principles. The aim of this project is, therefore, to define and develop a model of INCOSE that can be used to meet the mission of INCOSE by applying it to INCOSE. Initially, we will limit the scope of the project to providing a model that describes the INCOSE UK Chapter in the form of a systems engineering architecture that will then be disseminated and, where appropriate, rolled out to other INCOSE Chapters.

Two points impressed the INCOSE Foundation Board the most: the breadth of the work, and different geographic areas represented. These awards were announced at the 2017 INCOSE IW in January and we look forward to reporting on the progress of the grant recipients as the year progresses.

We would really like to continue making these grants available. Perhaps your chapter or working group would consider a collective gift to The INCOSE Foundation. Perhaps you are working on something you think is worthy. If so, watch for our next call for submissions. Until then, please help to support the future by giving in the present.

DONATION

Yes, please. I want to support the future of systems engineering.

Use the link above or complete this form and deliver to the INCOSE Booth.

Name: _____

Address: _____

25 USD ___ 50 USD ___ 75 USD ___ 100 USD ___ Other Amount _____ USD

Credit Card: _____

Exp. Date: _____ CVV _____

INCOSE FOUNDATION GENERAL FUND.

INCOSE FOUNDATION CHAPTER/WORKING GROUP AWARDS

James E. Long Fellowship carries a 5000 USD grant to someone involved in post-doctoral research that has the potential to advance the state of the art in systems thinking or the systems perspective.

You may also mail this form to:

INCOSE Foundation

7670 Opportunity Rd., Ste 220

San Diego, CA 92111 USA

foundation@incose.org

Your gift is fully tax-deductible to the extent allowed by the laws of your country. This link may provide useful information as you determine tax code in your country. <http://www.cof.org/resources/global-grantmaking>. We do strongly recommend that you consult your accountant.

EWLSE Update

Alice Squires, ewlse@incose.org

Contributors: Alberto Sols, and Erika Palmer

Early Saturday morning on the 21st of October, the Empowering Women as Leaders in Systems Engineering (EWLSE) sponsored a technical workshop, Leading and Managing Systems and Specialty Engineers, delivered at the American Society of Engineering Management (ASEM) annual conference in Huntsville, Alabama. The workshop, developed by Alberto Sols, Alice Squires, and Erika Palmer, addressed three major topics for technical managers of systems and specialty engineers: Part I) Technical Competency, Part II) Diversity and Team Building, and Part III) Processes and Policy.

Part I results included the identification of two common roles between systems and specialty engineers: systems thinker and effective communicator. Traits associated with the systems engineer role included leadership, being an adaptive learner, technical breadth, knowledge management, being systematic, mindfulness, and patience. Traits associated with the specialty engineer included technical knowledge, analytical skills, teamwork, accuracy, and self-confidence. Results for improving traits focused on intention and commitment, as well as recognition of ignorance and the desire to improve.

Part II results included the recognition that diversity, discrimination, and expectations differ between countries, and that while age and gender are visible, mindset and values are invisible, and culture is in some ways visible and in other ways invisible. One participant raised the point, "Do you want to sacrifice efficiency for effectiveness? When you communalize a model, you eliminate diversity." The group discussed pros and cons related to building diverse teams, with pros including new and diversified ideas, varying experience, balance, and innovation. Cons focused on challenges with communication and what type of communication is best, depending on individual preference and styles (direct versus subtle). The discussion about leveraging diversity in teams focused on the importance of openness and adaptability, matching people to what they are naturally good at, while also giving them a stretch goal and providing higher opportunities for self-development, being knowledgeable of and avoiding micro-aggressions, and getting the best out of everyone. However, the discussion also raised the question as to whether or not we were coming from a perspective of privilege focused on how we can leverage diversity to provide value to 'us.' The team decided that positive goodwill, intention, authenticity, empathy, and respect from the heart were what was important and everything else, such as miswording or potentially biased actions, can be overlooked when these positive factors are clearly present. Some things we can do to address this are to ask people about needs and expectations, listen to the answers, show we care, be respectful, and, as always, lead by example.

For Part III, the group reviewed a case study and developed a Strength, Weakness, Opportunity, and Threat (SWOT) matrix with recommended actions for the systems and specialty manager for the case presented. These actions, applicable to most organizations, focused on generating awareness and building demand for systems engineering in the organization, filling the gaps and areas of expertise that are missing in both the systems and specialties area, and focusing on the link between training, tools, and processes.

For the 2018 INCOSE International Workshop (IW), please join us on Monday, the 22nd of January 2018 at 3:30 pm for a combination working and outreach meeting open to men and women passionate about sharing lessons learned, best practices, and remaining challenges for advancing the empowerment of women as leaders in systems engineering. Using facilitated group activities and inputs from all participants, we will develop a way forward for 2018 and beyond. Leads will briefly present what has been accomplished in 2017 and plans for 2018 already in progress. Sign-up sheets for both requests for and representation of Empowering Women as Leaders in Systems Engineering (EWLSE) members at WIE, SWE, CSER, IEEE Systems, APCOSEC, EUSEC, and other society events, conferences, and regional or local gatherings will be available at the meeting. The meeting will be followed by a period of informal networking starting at 5pm for one hour, with snacks and drinks, where members can also form groups for follow-on social activities such as dinner, movie, bowling, beach, or sight-seeing, as desired.

Interested in joining EWLSE? We welcome you! To become a member of EWLSE, please log into your account on incose.org, go to Profile Home and add "Empowering Women" to your Committees/Working Groups. Anyone interested in being matched to a systems engineering mentor, please start by emailing ewlse@incose.org.





28th annual **INCOSE**
international symposium

Washington, DC, USA
July 7 - 12, 2018

Delivering Systems in the Age of Globalization

Engage with your colleagues from the Systems Engineering community!

Learn about state-of-the-art methods and essential skills for Systems Engineers.

Find out how people are making a difference with Systems Engineering.

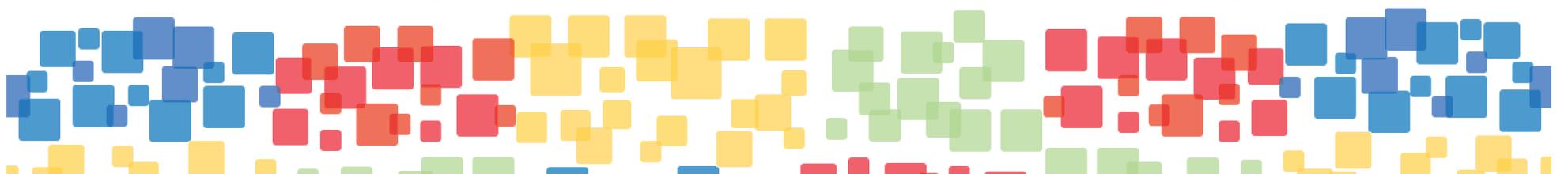
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Mark your calendar now!
July 7 - 12, 2018



Visit www.incose.org/symp2018 and contact us **TODAY** - The IS2018 Organizing Team



Per the terms of the INCOSE – Project Management Institute (PMI) Alliance agreement, each organization participates in the other’s annual major events. This year we had a lot of activity at the PMI Global Congress INCOSE booth, no doubt due, at least in part, to PMI’s aggressive marketing of the new book on integrating the project management and systems engineering effort. The latest version (v.6) of the Project Management Body of Knowledge also includes major changes acknowledging the dynamic nature of development effort. We made great connections, shared the story of systems engineering to hundreds for the very first time, and furthered the INCOSE *Vision 2025* in many ways.

Special thanks to Russell Kubychek and the Chicagoland Chapter for providing booth staffing this year, and to Jack Stein from the Detroit, US-MI chapter for making a special trip to help!

Systems Science Working Group

The Systems Science Working Group welcomes your participation in these two key events next year. You can help us identify and validate systems principles that improve the likelihood of successful systems interventions. Please join us at the INCOSE International Workshop and the International Society for the Systems Sciences (ISSS) Conference for these ground-breaking events.

Systems Principles for Systems Engineering: A full-day workshop session at IW18

The INCOSE Systems Science Working Group (SSWG), in collaboration with the International Society for the Systems Sciences (ISSS), will hold a full-day workshop

on systems principles on Sunday, the 21st of January 2018 in Jacksonville, US-FL. The workshop will cover all types of systems principles, including principles for problem structuring, design, optimization, production, and deployment. Presentations will provide example principles and case studies from a range of systems engineering contexts, and, via the exercises, participants will learn to identify, classify, and critically assess the principles available to systems engineering today, and to appreciate the challenges we face as we seek to strengthen the scientific foundations of systems engineering. The outputs of the workshop will be made available before or at the INCOSE International Symposium (IS) 2018, and used to define collaborative research projects to improve the principles underlying systems engineering practice.

The workshop sections will be led by David Rousseau (ISSS president and director of the Centre for Systems Philosophy UK), Javier Calvo-Amodio (assistant professor of Industrial and Manufacturing Engineering and director of the Change and Reliable Systems Engineering and Management Research Group (CaRSEM) at Oregon State University), Gary Smith (lead architect for Engineering Processes, Airbus Defence and Space, and INCOSE healthcare ambassador), Julie Billingham (program lead of Retail Digital Transformation, Salesforce), and Jennifer Wilby (ISSS vice president and past president, and vice president of the International Federation for Systems Research (IFSR)). Please join us for this event to help validate systems principles.

Innovation and Optimization in Nature and Design: A Conference on Systems Science following INCOSE IS2018

The International Society for the Systems Sciences (ISSS), with the support of INCOSE and the INCOSE Foundation is organizing an international conference on the principles relevant to the design

and realization of systems that are efficient, effective, robust, resilient, and that minimize unintended consequences. The ISSS conference (22-27 of July 2018) in Corvallis, Oregon (US), will occur two weeks after the 2018 INCOSE IS, and will involve a week of workshops, plenary presentations, and parallel tracks of papers grouped into more than 20 specialized interest themes. INCOSE president, Garry Roedler, will present a keynote address on the opening day. The conference will showcase systems principles arising from current research in systems science, engineering, the specialised sciences, and the arts and humanities. Conference attendees will learn about cutting edge developments in systems philosophy, systems science, systems engineering, and systems practice, and will be able to contribute to planning for research and evaluation projects aimed at strengthening the foundations of practice across the systems community.

The conference will facilitate the establishment of a research coordination network (RCN) and the definition of key projects to advance the foundations of systems knowledge for the benefit of the systems community. A key input for this will be the results of the EMEA Sector’s recent Biennial Workshop and the INCOSE Systems Science Working Group’s sessions at the 2017 and 2018 INCOSE International Workshops (IWs). Systems engineering is a transdisciplinary approach, involving aspects of philosophy, research, design, production, and intervention, and this conference is therefore of pivotal relevance to systems engineers. For more information visit: http://iss.org/world/ISSS2018_Corvallis



28th annual **INCOSE**
international symposium

Washington, DC, USA

July 7 - 12, 2018

Call for Abstracts for Presentations

The INCOSE International Symposium is the premier international forum for Systems Engineering. Participants network, share ideas, knowledge and practices, and learn more about the most recent innovations, trends, experiences and issues in Systems Engineering from world-class thought leaders in the field.

In an effort to respond to ideas coming from a number of INCOSE members and Symposium participants, the Corporate Advisory Board, the Board of Directors and, Technical Operations the 2018 Symposium will feature an opportunity for expanded participation in the program through designed presentations of material not intended to be the subject of more formal papers. The goal is to broaden participation and learning by opening the opportunity for innovative and challenging material that would not otherwise be available in other formats. This Call for Presentation Abstracts is the initial step in the proof of concept process in expanding the Symposium program to greater participation and engagement.

The theme for the INCOSE International Symposium 2018 is:

Delivering Systems in the Age of Globalization

INCOSE appreciates all submissions on Systems Engineering, with particular emphasis on:

Understanding and appreciating threats and risks in complex environments

Domains

- Automation & Smart Cities
- Aerospace and Defense
- Cybersecurity
- Energy & Environment
- Healthcare and Biomedical
- Sustainable Technologies
- Transportation & Automotive

Emphasis Areas include but are not limited to:

- Critical Infrastructure
- Emerging Technologies
- Engineering Management
- Innovative Approaches: Agile, Iterative and Lean
- Internet of Things (IoT)/ Cyberphysical systems
- System of Systems (SoS)
- System Modernization
- System Resilience, Reliability, Safety
- System Security Engineering
- System Sustainment

Key Dates

| | |
|---|-------------------------------------|
| Submission deadline | 8 th January 2018 |
| Notification of acceptance and referee comments | 16 th February 2018 |
| Final Presentation | as directed in notice of acceptance |

Interested practitioners, researchers, managers and others in the field of Systems Engineering can create meaningful dialogues by sharing their knowledge through presentations and/or sessions during the Symposium. Presentation submissions are requested in accordance with the requirements given in this call for abstracts.

Call for Presentations

New in 2018, INCOSE will allow for presentation-only submissions. INCOSE encourages presenters to submit presentation abstracts addressing the key systems engineering themes described earlier. Presentations may cover fully developed topics or work in progress. In either case, the presentations should be designed to stimulate thought and discussion around the presentation topic within the audience.

Each abstract (not to exceed 1000 words) will include:

- a/ a description of the presentation topic and approach,
- b/ a brief statement of the reason for submission of the topic as a presentation (not to exceed 100 words),
- c/ a biographical sketch of each presenter (50-100 words each),
- d/ a statement of the presenters' suggestion as to which of the two time formats described below.

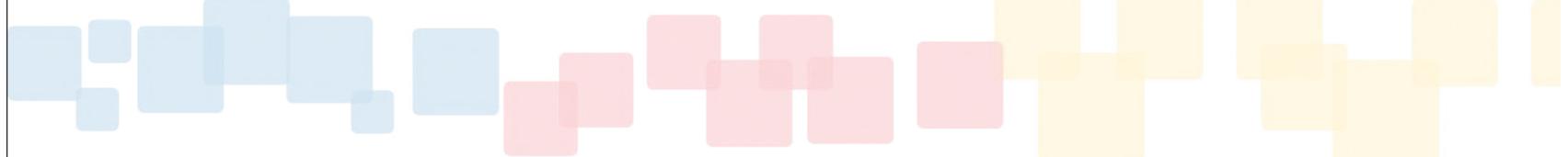
Presentations will be delivered in one of two formats: a 30 minute presentation with a 10 minute question and answer segment following or, a 15 minute presentation with a 5 minute question and answer segment following. Each submission should include the presenters' suggestion as to time format but presenters should be aware that the presentation will be assigned a format by the reviewers at the time of acceptance.

Each presentation abstract will be reviewed by at least 3 members of the INCOSE review team, and judged on a range of parameters. Presentations will be competitively evaluated using:

- Innovation in topic and approach
- Technical soundness
- Creative and compelling content
- Effective use of case studies
- NOTE: Presentations that are not systems engineering related or are sales pitches for products or services will not be considered.

Accepted presentations will be made available on the INCOSE web site. Presenters will be expected to provide the standard INCOSE IP releases for the presentation and all quoted material, whether graphical or verbal, must be used by permission or license and properly attributed to its source as required by the copyright holders. Evidence of the license and/or permission for each such object must be included in the slide notes for any slide on which the object appears.

Submissions can be made at <https://easychair.org/conferences/?conf=is2018present>



Spotlight ON!

Interviewed by Sandy Young, info@incose.org



Name: Serge Landry, ESEP

Title: Group Head (Systems and Software)

Organization: Thales Solutions Asia

Place of Birth: Le Mans, FR

Current Residence: Singapore

Domains: Research and technology; innovation

Studied in college: Mathematics and physics, micro-electronics, computer sciences, and artificial intelligence.

Year joined INCOSE: 2009

Role(s) in INCOSE: Immediate past-president of Singapore Chapter; first class of the INCOSE Technical Leadership Institute (2015-2017)

Years in systems engineering: 25+

1. How would you describe yourself in three words?

Curious, persistent, and caring. I am curious by nature; I am interested in many things. I am always well intentioned towards others and careful about finding a win-win to benefit both sides.

2. When did you first hear about systems engineering?

The book "Software Engineering: A Practitioner's Approach" from S. Pressman had a chapter on systems engineering that caught my attention when I was preparing a software engineering lecture at the University of Malaya in 1988. Upon joining Thales in late 1989, I contributed to the migration of the internal processes from the French GAM T17 to the DOD 2167A standards. This gave me a systems inclination early on in my career.

3. What are you working on today?

After working many years on development and delivery of mission-critical systems for end customers, I now focus my attention on research and innovation, looking for new ideas, and creating differentiators for both the end-user, and the business.

I also work on deploying and improving company processes as well as maintaining and improving the skill levels of our engineer populations as part of my role as head of systems discipline.

4. Complete the sentence: The biggest development in systems engineering in the near future will be about trade-offs for sustainability. Why?

We are inventing new things at a constantly increasing rate, while our resources are more and more limited. We

have to keep on doing more with less.

5. What did you learn from the INCOSE Technical Leadership Institute?

Among other things, I have learned or fine-tuned:

- Learning by doing: giving as a way to receive.
- Different leadership styles are useful in different contexts and with different people.
- Improving interactions with teams, peers, and managers.
- The power of self-organizing teams.

6. Tell us about your nomination for INCOSE's Asia Oceania director position.

I am a nominated candidate, which is a great honor and responsibility. Should the sector 3 chapter presidents elect me, I will dedicate my energy to serve the various stakeholders of our organization, starting with the members, to increase the impact of system engineering for the benefit of society as a whole. My vision is now available on the INCOSE [website](#).

7. What do you like to do outside of work?

To balance my sedentary life at the office, I engage in sportive activities like aikido (non-violent Japanese martial art), unicycling, riding cross-country, or playing hockey.

INCOSE INSIGHT

William Miller, insight@incose.org

The focus of the December issue of *INSIGHT* is the French Chapter of INCOSE, *Association Française d'Ingénierie Système (AFIS) Doctoral Symposium: New challenges and Advances in MBSE within French Universities*. This is our fifth issue devoted to doctoral research in France. The previous issues were July 2008 (Volume 11, Issue 3), December 2011 (Volume 14, Issue 4), December 2013 (Volume 16, Issue 4), and December 2015 (Volume 18, Issue 4). Theme editors selected the chosen articles after peer reviews from a larger set of doctoral presentations in collaboration with French universities and industry. Articles from theme editors Mario Lezoche and Hervé Panetto, and other authors address the following topics:

1. Theme Editorial
2. The First RobAFIS-RobSE International Student Competition in Systems Engineering
3. Is There Any Agility in Systems Engineering?
4. Assessing Interoperability Requirements in Networked Enterprises: A Model-Based System Engineering Approach

5. Management of the Design Process: Human Resource Allocation in Factories of the Future
6. Complex System Tacit Knowledge Extraction Through a Formal Method
7. ProCASEE: An Innovative Solution for Systems Engineering Education
8. Towards Model-Based Systems Engineering (MBSE) Patterns to Efficiently Reuse Know-How
9. Configuring Processes Variants Through Semantic Reasoning in Systems Engineering
10. A Framework to Improve Performance Measurement in Engineering Projects.

In addition, we are pleased to include survey results of INCOSE Fellows on their recommendations for systems engineering research. We look forward to addressing identified research needs and leveraging the ongoing INCOSE systems engineering transformation as an enabler to the *systems engineering of the future* beginning in 2018.

Note from the Editor

Lisa Hoverman, newsletter@incose.org



Welcome to the 4th and final INCOSE Members Newsletter of 2017! How fast this year, and our outgoing President, Alan Harding's tenure have gone! I have had the privilege to work under two full INCOSE President's now, and both have done such impressive jobs at aiding in the growth and quality of our organization. I want to extend a sincere thank you to

Alan for all you've done for INCOSE – we are truly more inclusive! I also want to thank you for all I know you will continue to do, and look forward to working with you in other capacities in the coming years. I extend a warm welcome to Garry Roedler as incoming President and all newly elected Board Members.

With the [International Workshop \(IW\)](#) just a few weeks out, I hope you are gearing up for state of the art work in systems engineering, networking, certification, and more. We need to be better at telling the stories of our work in systems engineering, especially the work that comes from the talented working groups that gather and focus at each IW, so please, try to make a plan to share what you've done at the IW in the 2018 Q1 Newsletter.

The Newsletter continues to grow and improve in content to inform our readership on all things INCOSE – both

current, upcoming, but also historically. Please use this venue as a start or a highlight to the stories and great work that you are doing in your working groups, and then, use this update as a spur to publish your work (and then let us know here!) in one of our three systems engineering journals (*The SE Journal, INSIGHT, or JET*). This is how we will move INCOSE and systems engineering further forward.

In this version of the Newsletter we have a great recap on his Presidency from Alan Harding with a vision for the future, updates from each Sector, news from the INCOSE Foundation, notes from the last Board meeting in Orlando, and a great look as some INCOSE conferences, initiatives and happenings in Academia and around the world. We are moving into our 4th year of publication and growing with your stellar submissions – but we need to keep improving this newsletter, and our journals, so please help us! Keep sharing your updates and items of interest with us as we continuously work to improve our communications. I hope that you see some of your suggestions and contributions in this issue. As always, we welcome feedback and contributors.

As a note, all of our cover photos come from the Q4 Board meeting in Orlando, US-FL. A sincere thank you, thank you to Andy Pickard for taking great photos as always and making them available and easily accessible for our use.

I end with a sincere note of appreciation to all who contributed to this Newsletter and updated members on the many events, and opportunities in INCOSE and your specific areas of systems engineering. I look forward to your upcoming contributions (submission dates below) as we continue to improve and grow the Newsletter.

Have a terrific end of 2017 and a very Happy New Year! See you at the IW!

Due Dates for 2018 Newsletter:

Q1 Newsletter, General Content (GC): Feb 15; Late Breaking News (LBN): Feb 20

Q2 Newsletter, GC: May 15; LBN: May 20

Q3 Newsletter, GC: Aug 15, LBN: Aug 20

Q4 Newsletter, GC: Nov 15, LBN: Nov 20

INCOSE Member Newsletter

Publication of the International Council on Systems Engineering

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On the Web <http://www.incose.org>

Article Submission newsletter@incose.org

Publication Schedule. The INCOSE Member e-Newsletter is published four times per year. Issue and article/advertisement submission deadlines are as follows: 4th Qtr 2017 issue – 15 Nov. For further information on submissions and issue themes, visit the INCOSE website as listed above.

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Who are we? INCOSE is a 10,000+ member organization of systems engineers and others interested in systems engineering. Its mission is to share, promote, and advance the best of systems engineering from across the globe for the benefit of humanity and the planet. INCOSE charters chapters worldwide, includes a corporate advisory board, and is led by elected officers and directors.

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