



Q2 2023

INCOSE MEMBERS NEWSLETTER

The International Council on Systems Engineering

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- FuSE Streams Update
- Chapter Updates
- SE Handbook Fifth Edition
- Latest Products

And much more...

A Better World Through a Systems Approach

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Editor's Letter

Dear INCOSE Members,



Welcome to this month's edition of the INCOSE Newsletter! We've got a lot of exciting news and updates to share.

First up, get ready for the transformative International Symposium 2023 in Honolulu.

We've planned a fantastic line-up of keynote speakers, engaging sessions, and even our first-ever INCOSE Hackathon. Whether you're joining us in person or online, this event is set to make INCOSE history!

Our Executive Director, Steve Records, has an inspiring message this month, celebrating 33 years of INCOSE and announcing a strategic planning process that will bring a refreshing focus to our organization.

We're thrilled to announce the upcoming release of the SE Handbook Fifth Edition, packed with the latest in Systems Engineering knowledge. Also, watch out for updates to our website and the Professional Development

Portal, aiming to provide more value to our members.

Finally, we are looking forward to the International Symposium, Australasian Simulation Congress, the Western States Regional Conference, and the Nordic Systems Engineering Autumn Tour, which are all scheduled to take place by September; continuing our commitment to global inclusivity.

Remember, we're always eager to hear from you. Let's make 2023 and beyond an exceptional time for INCOSE!

Warm regards,

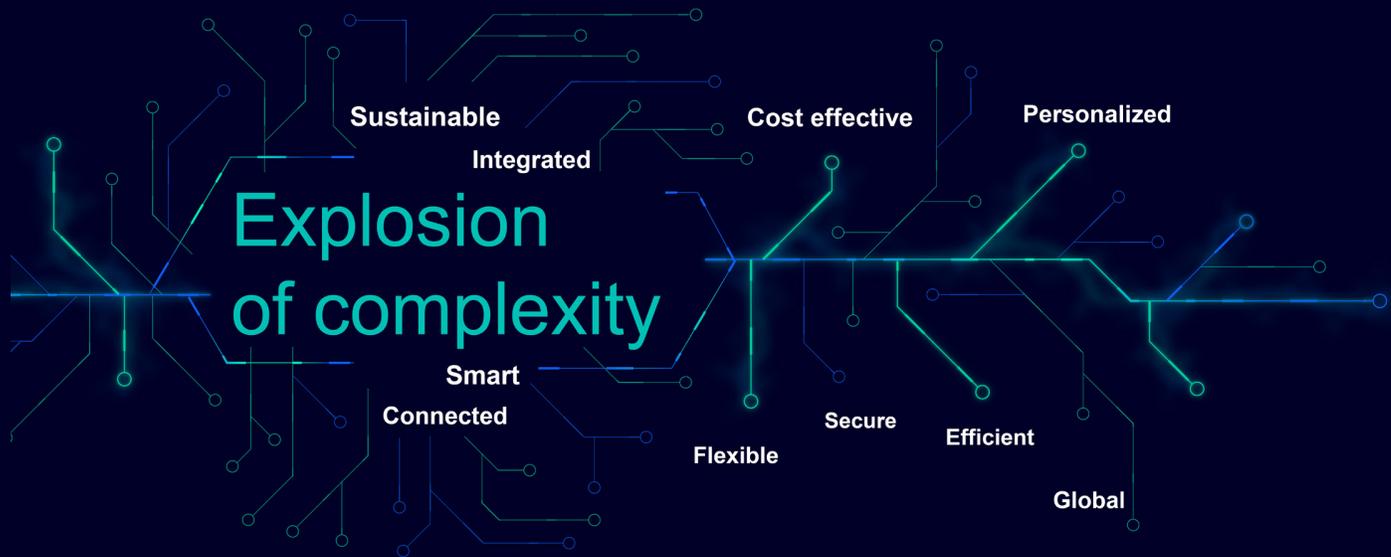
Honor A. Lind

Director of Marketing and Communication,
INCOSE

Editor-in-Chief, INCOSE Newsletter

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Visit our booth #7/8 and ask about this game-changer

Visit our booth

SIEMENS

A Message from INCOSE President, Marilee Wheaton

Colleagues,



Welcome to the 2nd edition of the 2023 Members Newsletter. 2023 is proving to be another year of great products, services, and outcomes! We have and are kicking off several new initiatives as well as exploring fundamental changes to how INCOSE is run

with the appointment of our first Executive Director (ED), Steve Records.

I understand that for many, change can be challenging, but the Board of Directors strongly believe that INCOSE is now at a juncture where we need to evaluate the way the organization operates, so we can continue to grow, add member value and extend our global influence, delivering on our pledge 'A better world through a systems approach'. I would encourage anyone who has questions about Steve's efforts as ED to reach out to him directly.

The call for nominations for INCOSE Board Position is currently out and more information can be found on [page 26](#). You may have noticed the Chief Information Officer position is no longer advertised; the Board has decided this role should be filled by a member of staff reporting directly to Steve, the Executive Director. I would like to take this opportunity to thank Dr. Barclay Brown for his talent and efforts as the Chief Information Officer. He will continue to complete his term of office, but it is worth noting how much positive change Barclay has overseen in terms of INCOSE IT, facilitating collaboration applications such as

Teams and Zoom which enabled us to get through the pandemic, and the relaunch of the new website, which is still underway. Barclay, a heartfelt thank you.

As you know from the International Workshop, and a range of other communications, the FuSE Initiative is one of our main activities and an update on progress is given on [page 22](#).

In addition, Working Groups are launching a range of products in the leadup to and at International Symposium (IS2023). These include 'Realizing Relevance: Stories for Our Digital Era: The Business Value of Thinking in Systems and ebook', 'Digital Systems Engineering Process Model', 'The HSI Primer Volume 1' and more. The 5th edition of the SE Handbook is also about to hit the shelves with a 55% discount on hard copies for members. Read about the differences between v4 and v5, on [page 53](#). Sincere congratulations and heartfelt thanks to all the working group members who have been diligent on developing the various products and advancing systems engineering.

Also, in this newsletter you can read about the EMEA WSEC 2023 that took place in April, as well as updates from various Chapters from across the globe. It is also very exciting to see that SySTEAM are holding their first mini conference July 27-28, 2023. More information about this is on [page 48](#).

I look forward to hearing your feedback, in person at IS or via email.

Warm regards,
Marilee

A Message From the Executive Director, Steve Records

INCOSE members,



I'd like to first say 'Thank You' to all of you for being members. You are the reason we exist. We likely do not say thanks enough, but it is collectively your energy, passion, and commitment to both the SE discipline and your own professional development that

fuels INCOSE.

It is my privilege to be the first Executive Director at INCOSE. I would like to thank all the past leaders, volunteers, and INCOSE supporters that have helped make INCOSE what it is. For the past 33 years, INCOSE has relied on the blood, sweat, and tears of our leaders. From International Board Director to chapter president to working group participant, your service cannot be understated and we celebrate you.

While INCOSE has a rich past, we find ourselves at the beginning of some new and exciting times. INCOSE has grown to represent more than 21,000 individuals from more than 1,000 companies and certify more than 4,000 people globally, but we can do so much more. We can not only continue our growth, but we can shift and focus to create more impact for our members and elevated leadership in systems thinking and systems engineering.

This summer we are launching a new strategic planning process that will include you. We are preparing a member survey so that you can assist INCOSE in our direction, our value propositions,

and impact. Our new plan will work to focus us in ways we have not operated previously. It will also define metrics and goals to align to our stated objectives and allow us to allocate resources to our top priorities. In other words, we are building a new plan that will include SE principles!

The INCOSE Board of Directors is also refocusing on the future. With the addition of my role and as I work to build an internal INCOSE staff, our Board will focus on strategy and what we need to be in 5-10 years to help fulfill our mission and Vision 2035. Make no mistake, some of these changes are immense and culture change certainly does not occur quickly. This will not be an easy shift for the organization, but it is an absolute necessity to sustain INCOSE for the next 30 years.

In the meantime, INCOSE will maintain its commitment to serve you and bring you high value items. This summer the International Symposium will be in Honolulu. We will be launching Version 5 of the SE Handbook. We are preparing to launch an updated website and some really cool new tools for our members with our Professional Development Portal and SE Lab on incose.org. In the future, we are committed to being more inclusive and more global as well. The International Symposium will be in Europe in the summer of 2024 and our International Workshop will be in Europe in January 2025.

So again, thank you for your membership. I will leave you all with 1 ask – get 1 other person involved in INCOSE! Our network is one of our most valuable assets, and each of you are some of our greatest spokespeople. You may be amazed at

how much reception you receive with the INCOSE conversation. I am at your service. Please do not hesitate to ask me questions directly (steve.records@incose.net) should you have any concerns.

Records Brings Energy and Experience to Newly Created Executive Director Role

The new INCOSE Executive Director Steve Records has been getting up to speed in INCOSE since his start in April. He started this new position as he started all positions: by asking many questions.

"The good thing about being new to an organization and coming in with a fresh set of eyes is that I can ask a lot of dumb questions," he said. "I'm always asking 'Why?' and asking 'Why?' again."

In that way, Records said he hopes to uncover processes and procedures that are not working so that he can help the organization improve. *"Everyone likes progress but nobody really likes change,"* he said.

Records came to INCOSE from the Grain Elevator and Processing Society where he was Executive Director and International Board Executive Vice President. He also served as Chairman and CEO of the GEAPS Media Group, and Executive Director and Board Executive Vice President of the GEAPS Foundation. Before joining the GEAPS family, he was Vice President of Operations for SCORE Association and SCORE Foundation.

He earned an MBA in finance from the University of Nevada, Las Vegas, and is a Certified Association Executive.

Records did get his start in engineering, though. He earned a bachelor's degree in chemical engineering from Purdue University.

"I claim to be a recovering engineer," he joked.

"I like people. INCOSE is a people organization. We exist because of our members, because of our people," he said. *"Every nonprofit has a challenge of the day just like every business has a challenge of the day. You want to be proactive. It's a new challenge, and that excites me. Being new to the role, new to a new role is even more exciting to think of the art of the possible."*

Records will manage, oversee and support relevant outreach initiatives and events for the membership organization for systems engineering professionals. He also will serve as spokesperson for INCOSE, and advise and support its Board of Directors.

In announcing Records' appointment, the organization said: *"The creation of an Executive Director position is another sign of the growth of INCOSE and the influence of global systems engineering."*

By Beth E. Concepción



33rd Annual **INCOSE**
international symposium

HYBRID EVENT

Honolulu, HI, USA
July 15 - 20, 2023

The Premier International Systems Engineering Conference

Are you ready for the renowned #INCOSEIS experience?

The technical program is out...

and it's time to start planning your agenda!

Explore 3 inspiring keynotes, over 160 presentations, panels, tutorials, and more on the 6-day, 6-track program.

You're promised a great experience, whether you join us in Hawaii or from home!

Our Keynotes



Matthew Kamakani Lynch
The University of Hawai'i System

Former Director of Sustainability Initiatives

Speaking topic
"Sustainability"



Sir Julian Young

Past-President of the Institution of Engineering and Technology (IET) - lately Air Marshal as Director General Air at Defence Equipment & Support

Speaking topic
Inspiring Systems Engineers: the Wonder Woman & Superman methodology different actions first



Rahul C. Basole, Ph.D.
Accenture

Managing Director and Global Lead for Visualization and Interaction Science; AI Strategy

Speaking topic
Intersection of data visualization, data science, and AI

One event Two experiences

In person participation

Virtual participation

4 days
Keynotes
Invited content
Best papers presentations
Broadcast sessions available for replay on app
Recordings of all sessions available from the INCOSE website 60 days post IS

On-site Program (6 parallel tracks)
SE Fundamentals (In person)
Weekend SE Tutorials (2days)
Networking gatherings

Virtual Track (0800-1350-EDT)
SE Fundamentals sessions (Virtual)
Hackathon
IS Chat

Don't miss #INCOSEIS 2023?

- Learn something new that you can use on the job
- Enjoy a diversified program on different application domains
- Expand your worldwide network of colleagues in the SE community
- Get inspired by forward-looking thought leaders
- Share your own experience and contribute to advancing the discipline
- Gain knowledge that goes beyond your field or interest
- Keep up to date with the latest from our sponsors and exhibitors
- Benefit from Professional Development Units for your participation
- Take the INCOSE knowledge exam for certification as ASEP or CSEP
- Engage in open discussions with INCOSE Leadership during social events

Sign up now

If you are a Member, Student, Senior Member, Government Employee, Presenter, or reside in a PPP2 or PPP3 country, remember to take advantage of your reduced rate

Thanks to our sponsors



www.incose.org/symp2023

My Place or Yours? Attend INCOSE's International Symposium – In Hawaii or Virtually



33rd Annual **INCOSE**
international symposium

hybrid event

Honolulu, HI, USA
July 15 - 20, 2023

The 33rd Annual International Symposium in Honolulu, Hawaii July 15-20 is almost here. As of May 25th, our registrations numbers are higher than any previous symposium.

You can help make this the best International Symposium by joining the people who have already registered for this engaging event. If you can't join us in Hawaii, join us virtually - one event with two experiences! Talk about systems engineering, MBSE, digital engineering, sustainability, social science, and more with other people who are as passionate as you. [Register now](#) for either in person or virtual participation.

Listen to our three inspiring [keynote speakers](#) – Matthew Kamakani Lynch, founding member of Hawaii Green Growth Local 2030 Hub, will be speaking about “sustainability”; Sir Julian Young, formerly the president of the Institute of Engineering and Technology, will talk about the Wonder-Woman & Superman methodology; and Dr. Rahul Basole, managing director and global lead for Visualization and Interaction Science at Accenture, will be talking about the intersection of data visualization, data science, and AI.

If you join us in Hawaii, engage in our full 6 track [technical program](#) – we have over 135 papers, presentations, and panels spread over four days. Start planning now on which papers, presentations, and panels you want to attend. Come early to take advantage of the 15 tutorials offered on Saturday and Sunday (at an additional

cost) advancing your knowledge and skills. Network at our [social events](#) or have a conversation with old and new friends. Check out our [sponsors](#) and [exhibitors](#) to learn about the latest in training, services, and products available to support your systems engineering initiatives. If you can't make it to sunny Hawaii plan to join us virtually. The [virtual program](#) provides access to a virtual track starting at 08:00 EDT. After these sessions, join the in person program starting at 14:00 EDT. The broadcast continues into the night – see the virtual program to understand exactly what will be broadcast. Take part in the first ever INCOSE Hackathon.

If you can't attend a session when presented, all broadcast material will be available through the app and platform within 24 hours of broadcasting. So, if you miss something you can watch it while the event is still going on and for four weeks post-event. After the event, all papers, presentations, and recordings will be available through the INCOSE website. Anyone who attended the conference, whether in person or virtually, will have access to all conference material within 90 days of the event closing.

Start planning to join us next year when we will be in Dublin, Ireland 29 June – 4 July! Call for submissions will be released shortly after IS2023 closes.

By Donna Long, CSEP, Associate Director, Events





33rd Annual **INCOSSE**
international symposium

Buddy up and Dine!

New to IS? New to INCOSSE? Not new but hate to dine alone?

Announcing 'Buddy up and Dine'

The New Member and Marketing Teams would like to invite you to join other IS attendees for an informal dinner at local restaurants. Meet some new friends and colleagues and engage with others over a nice dinner.

To join, meet at the Starbucks in the Ala Moana Hotel lobby at the times listed below. From there, we will collectively choose which restaurant we will be going to.

Day	Meet up Time	Departure Time
Saturday, July 15	18:00	18:20
Sunday, July 16	18:00	18:20
Monday, July 17	19:00	19:20*
Tuesday, July 18	18:00	18:20

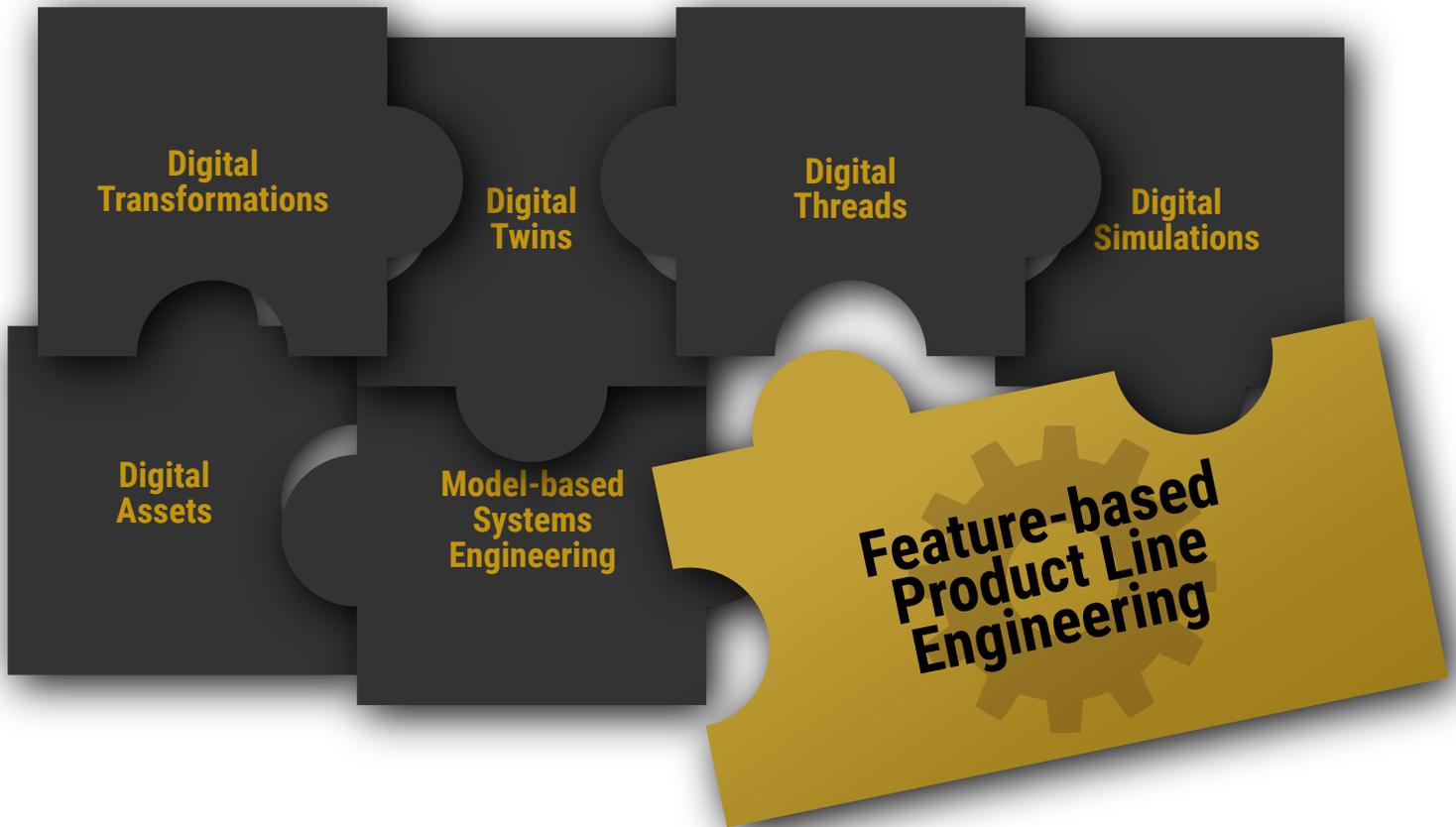
For those who don't wish to join this group but want different options of where to go for dinner, members of our team at the Welcome Center booth, next to the IS2023 registration desks. Alternatively, email nme@incose.net for more information.

** On Monday, join the Ice Breaker Reception at the convention center exhibition hall before meeting to 'Buddy up and Dine'.*

On Wednesday night there is the Royal Hawaiian Luau taking place; a great networking and culture experience. Due to this event taking place, there will be no formal 'Buddy up and Dine'.

Please note everyone will need to pay for their own food and drinks.

Are You Missing a Piece of Your Digital Engineering Puzzle?



Feature-based PLE is critical to a Holistic Digital Engineering Program

According to the ISO 26580 standard, PLE is the **modern digital engineering approach** that significantly reduces engineering complexity.



PLE brings your Digital Engineering Puzzle together.

Learn more at www.BigLever.com

The Successful Launch of Calling All Systems



9 Global Experts



870 Attendees



Attendance from 29 countries



900+ Views on Youtube

Calling All Systems, a series of panel discussions hosted by INCOSE, brings together thought leaders from across the globe.

It was launched on March 21st, 2023, with a panel session on 'The Future of MBSE' chaired by Dr. Barclay Brown, INCOSE Chief Information Officer. The panel session featured the following experts in the field of Model-Based Systems Engineering:

- Todd Tuthill, President for Aerospace and Defense Strategy and Marketing at Siemens Digital Industry Software
- Brett Hillhouse, Global Automotive Leader for IBM Sustainability Software
- Stephanie Sharo Chiesi, Doctoral Candidate at Stevens Institute of Technology
- Troy Peterson, Vice President and Fellow at SSI
- Garrett Thurston, Global Transformation at Dassault Systèmes.

This session was kindly sponsored by Siemens. Watch it now on the INCOSE Youtube channel.

Following the success of the first session, the second session in the series took place May 11, posing the question 'Product Line Engineering: Are You Missing the Piece in Your Digital Engineering Puzzle?'. The second session was once again chaired by Dr. Barclay Brown, INCOSE Chief Information Officer and featured six thought leaders in the field of MBSE. Sitting on this panel were:

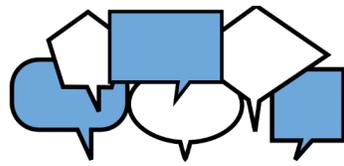
- Dr. Charles Kruger, Founder and CEO of BigLever Software
- Mr. Marco Forlingieri, Senior Technical Representative, IBM Engineering, South East Asia, and Co-chair of the INCOSE Product Line Engineering (PLE) Working Group
- Rowland Darbin, INCOSE PLE Working Group Co-Chair and Lead of the Product Line Engineering (PLE) Center of Excellence at General Dynamics Mission Systems
- Dr. Bobbi Young, retired Raytheon Technologies Engineering Fellow and Certified Architect
- Brian Pepper, Industry Process Senior Specialist for Dassault Systèmes

This session was kindly sponsored by BigLever. Watch it now on the INCOSE Youtube channel.

Thank you to everyone who attended. The next Calling All Systems Session, sponsored by IBM, will be taking place September 19, 2023 with a focus on sustainability.

The Calling All Systems Series is sponsored by:





CALLING ALL SYSTEMS

Series Sponsor



Product Line Engineering:

Are You Missing a Piece in Your Digital Engineering Puzzle?

Session sponsor



Dr. Charles Krueger
BigLever Software



Marco Forlingieri
IBM Engineering



Dr. Bobbi Young
Worcester Polytechnic
Institute



Rowland Darbin
INCOSE PLE
Working Group



Brian Pepper
Dassault Systèmes

The Future of MBSE

Session sponsor **SIEMENS**



Todd Tuthill
Siemens Digital
Industry Software



Brett Hillhouse
IBM Sustainability
Software



**Stephanie Sharo
Chiesi**
Stevens Institute of
Technology



Troy Peterson
SSI



Garrett Thurston
Dassault Systèmes



Watch the replays at [incose.org/callingallsystems](https://www.incose.org/callingallsystems)

INCOSE

International Council on Systems Engineering
A better world through a systems approach / www.incose.org

An Update from INCOSE Certification



INCOSE's significant reference book, the INCOSE Systems Engineering Handbook, will publish its Fifth Edition in July 2023. The Certification Program has spent the past year preparing for this, particularly its impact on our knowledge exam.

Our intern, Mrunmayi Joshi, ASEP, delivered a webinar on this topic and has presented it at several international conferences in 2022 and 2023, along with handbook editor, Bernardo Delicado, ESEP.

The most common question we're hearing about the new handbook and its impact on certification: when is the last date I can take the exam if I study on the current handbook (Fourth Edition)? The simple answer is that you can definitely test through all of 2023 into the middle of 2024, and possibly through the end of 2024. We are updating the exam in response to the new handbook, but we are not testing on any new content until at least 2024. We explain more about our hybrid exam (testing only on the content that is found in both the old and new handbook versions) in [INCOSE Webinar 160](#).

The near-final steps of our exam update are beta testing (completed earlier this month), beta analysis, and final review of the published handbook, learning objectives, and exam content. This beta testing process is described in a paper from the [previous handbook update in 2015](#).

There are two ways to get certified without taking the exam: Academic Equivalency (AcEq) and applying for ESEP. In the world of AcEq, we are happy to announce two universities who have been recognized this quarter: Marquette University and University of Maryland Global Campus. Students who do well in designated courses at these schools meet the knowledge requirement for certification as ASEPs or CSEPs.

Universities interested in learning more about Academic Equivalency should [visit this webpage](#), and express their interest through our [online form](#).

Those very experienced technical leaders who apply for certification at the expert level will not take the knowledge exam or its equivalents. They will, however, need to explain their technical leadership and professional development in their own words. These requirements have previously been met through oral interview. For the remainder of 2023, the INCOSE Certification Program is running a trial of allowing candidates to answer their leadership interview questions in writing, rather than orally. All ESEP candidates will be given this option, and their review team will be allowed to approve them based solely on their written inputs. If their review teams want more information, the candidates and their references may be asked to participate in oral interviews. This path will benefit candidates, who will all have equal access to the interview questions, and will benefit reviewers, who will have a written record of responses. This is similar to systems engineering work, which values quality of a response over its speed. ESEP written questions will be sent to ESEP candidates after their other paperwork has been submitted, and there will be a deadline for when the written responses are due.

The Certification Program is working to create an equitable and efficient experience for all candidates. We believe the changes described above move us closer to that.

By Courtney Wright, CSEP, INCOSE Certification Program Manager
courtney.wright@incose.net



Modeling Cognitive Diversity Across the Systems Lifecycle



INCOSE's 2023 International Workshop offered much insight into the climate of our industry and how to make improvements. Each year is intended to send participants away better and more knowledgeable than when they arrived, and this year was nothing short of expectations.

Maria Romero, INCOSE Diversity, Equity, and Inclusion (DEI) Lead and expert Systems Engineer, led the workshop, "Modeling Cognitive Diversity Across the System Lifecycle," alongside preparation help from Taylor Duffy, DEI volunteer from SPEC Innovations, the developers of Innoslate. Romero began the workshop by sharing their research and background on Neurodiversity, MBSE, and how all of it comes together for our industry. This segued the group into a discussion, as they created a live model on factors that would create inclusivity for neurodivergent engineers in the industry.

People around the room were quick to bring up their own personal experiences with coworkers, family, and friends that are neurodivergent. They discussed their often elite memorization skills, their ability to think outside the box and do things differently, and how many neurodivergent minds move faster and get to ideas that neurotypical minds do not. Although these were common sentiments, everyone is different. Why should we expect all neurodivergent people to be the same when neurotypical people aren't even the same? Our vast differences allow us to see different perspectives, making neurodivergent thoughts and opinions integral for any group.

The group agreed on the idea of assessments for all employees. This provides the opportunity to figure out best practices for schedules, learning types, communication styles, environments, instructions, and more, without singling anyone out as neurodivergent or neurotypical. It could be

an annual, anonymous survey taken to make sure everyone is comfortable and their needs are met. These accommodations to different cognitive patterns should be on the same tier as wheelchair ramps or elevators for various physical conditions. Discussion of a risk element arose around the topic of disclosing diagnoses. There is a liability and responsibility for the company once they are aware of any medical conditions, so the best way to combat these risks is to practice preventative measures like these assessments rather than make changes after an issue.

Continuous assessments are necessary as life is ever-changing, while continuing to maintain a level of privacy. Some individuals are champions for things that make them different or special and come forward, but companies need to be prepared to make the initiative themselves. One workshop member shared how easy it can be for neurodivergent people to learn to tolerate things as the "average human experience." This also applies to tolerating assumed social norms or expectations. No one should have to do this, as it takes away from their experience, being in the moment, and leaning into their ability of different thought patterns and ideas. It would be very beneficial to set requirements of the actual expectations so no one has to tolerate unnecessary aspects.

There was something so beautiful and organic in the way everyone at the workshop got into discussion and shed light on different opinions, aspects, and ideas on the topic. Discourse on the topic and those open to it will be the ones to change the industry. An inclusive environment that values the voices of all will foster this change and allow those individuals to feel comfortable enough to come forward.

By Taylor Duffy, taylor.duffy@specinnovations.com

Empowering Women Leaders Around the Globe

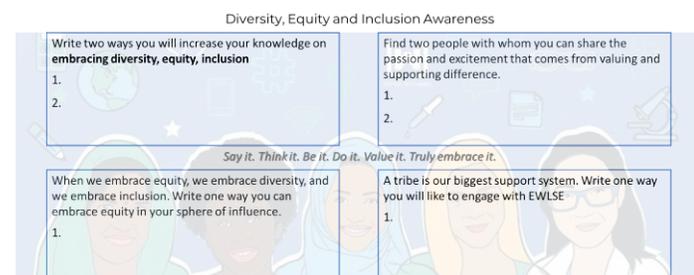


Welcome to the EWLSE leadership team newsletter update. This update is focused on events that EWLSE held in Europe and Asia, starting with an EWSLE workshop at the EMEA Workshop and Systems Engineering Conference (WSEC) 2023 on April 24th in Seville, Spain, followed by a learning session on requirement engineering held at the SWE Local conference in Bengaluru, India on April 27th.

All INCOSE members are welcome to join the Empowering Women Initiative (you can join by going to your INCOSE.org Profile > Join A Working Group > Empowering Women), and the Empowering Women Yammer community (web.yammer.com) to share your positive news and examples of empowered leaders in systems engineering. We would love to hear from you! Please feel free to follow up with the EWLSE leadership team with greetings, queries, comments or stories at ewlse-leaders@incose.net.

EMEA WSEC Conference 2023 Update

EWLSE and DEI organized a workshop during the recent EMEA WSEC Conference 2023 held in Seville, Spain. The theme of the conference was 'Engineering a Sustainable World', inspired by the key role Systems Engineering can play in achieving the United Nations Sustainable Development Goals (UN SDGs), targeting Societal Challenges and focusing on highly complex/ chaotic systems aligned with the INCOSE Vision 2035 for a better world.



President of the INCOSE Spain Chapter Anabel Fraga along with Stueti Gupta, Asia Oceania EWLSE Lead, organized a 90 mins workshop on EWLSE and DEI. The session created awareness of EWLSE and its various activities among the participants. Anabel also shared about the Volunteering group in Spain for STEM activities jointly, the creation of a mentoring program in EMEA, and the seed of a project to create a SySTEAM initiative linked to INCOSE in EMEA supported by the EMEA Director. The participants were engaged via an action card on DEI. We discussed participants' responses in each of the four boxes. This also enabled peers to learn about key resources among them.



We encourage the readers to use the above action card as a means to reflect on their current knowledge of DEI and how they would like to develop that knowledge.

In the second part of the session, Elena Gallego, Systems Engineering Manager F126 at Thales, delivered a talk on Engineering transformation requires diversity and inclusion to respond the demands of increasingly complex solutions. She explained the importance of diverse teams that perform better in affordability, agility, quality, and efficiency. Diversity allows innovative thinking, new behaviors, and corporate culture and infrastructure transformations.

In addition to the activities already completed in 2023, we continue to prepare DEI and EWLSE related events to take place during the **INCOSE IS 2023**, **AOSEC 2023** with **EWLSE 2023**, **WE 2023**, and

IWD 2024. Stay tuned for announcements on these activities, including through social media. Elena presented that well-managed diverse teams increase the viewpoints and improve decision-making and problem-solving processes. Also, it is essential to cultivate an international mindset that invites diverse viewpoints and broadens employees' vision. Elena commented that Thales is committed to creating a respectful, equitable, stimulating work environment where creativity is encouraged and where valuing each person's authentic self is a prerequisite for individual well-being and collective success. Trust within teams reflects the trust customers place in Thales. And finally, citing Elena's conclusions: Engineering Transformation can be culturally disruptive, time-consuming, and resource-intensive. Diversity is business success. It was a pleasure to have this special talk during the workshop session that all the audience appreciated and were inspired by.

Society of Women Engineers' WE Local Conference in Bengaluru, India

Society of Women Engineers' (SWE) organizes WE Local conferences to bring together engineers in all stages of their collegiate and professional journey. The conferences curates a wide variety of professional development sessions, talks from inspirational speakers, networking opportunities, and career fair. This year the conference in India was held from 27th to 28nd April in Bengaluru and had over 1,300 participants.

Stueti Gupta, EWLSE Lead for Asia Oceania, was selected to speak in one of the sessions. In the 45 mins learning session, Stueti's talk was on Requirements Engineering. There were 80+ participants in the session. Stueti along with her co-speaker Suvigya Gupta, MBSE Engineer at BlueKei Solutions, made the session very interactive with some live activities and popular industry case studies.

According to a study by the National Institute of Standards and Technology (NIST), poor requirements practices are a leading cause of project failure in systems engineering. The study found that 48% of system development projects fail to meet their objectives, and 70% of those failures can be traced back to poor requirements practices. A study by the Project Management

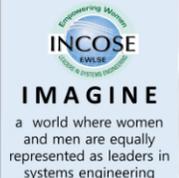
EMEA WSEC Conference workshop results summary:

OBJECTIVES

- Ensuring that the systems engineering team and its leadership is inclusive, welcomes a diverse range of talent, promotes cognitive diversity and diversity of ideas.
- Having a diverse range of talent helps to bridge the knowledge gaps and increase innovation. It is the diversity of thought and knowledge to help build a better workforce that will benefit everyone with a diverse set of skills.
- Accommodating different disciplines, backgrounds, and diversity of thought will help build a processes and structures that will be sustainable over time.
- To broaden awareness of the current state of women in leadership, remove obstacles for women seeking engineering related leadership roles, collaborate with professional societies, industry, government, academia, and individual advocates, and celebrate the benefits of diversity throughout differing cultures.



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a better world through a systems approach



INCOSE
IMAGINE
a world where women and men are equally represented as leaders in systems engineering

<http://incoe.org/wslr>

METHODS

- Presentation of EWLSE and DEI
- Presentation of ongoing projects
- Reflection exercise with Action Card
- Case of success in Thales
- Brainstorming ideas and participation in volunteering, mentoring or SySTEAM initiative



RESULTS

- Nine participants
- Ways to increase knowledge and embrace equity:
 - Participating in DEI initiatives
 - Local mentoring
 - Create diverse teams
 - Sharing experiences in webinars and events
- It should be natural diversity, equity, and inclusion; and not something we have to talk about to become a reality.
- It might be interesting to incorporate DEI and EWLSE as a transversal aspect of the organization, not an independent and isolated department/WG/team.
- When we embrace equity, we embrace diversity, and therefore we embrace inclusion.
- Promote a SySTEAM initiative in EMEA
- Continue working with the CIO to prepare the mentoring platform for EMEA, having face-2-face and virtual mentoring.

Engineering Transformation can be culturally disruptive, time-consuming and resource intensive
Diversity is business success (Elena Gallego – Thales)

CONTACTS / REFERENCES

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Reference: McKinsey and Company. *Diversity wins - How inclusion matters*. May 2020. "Companies in the top quartile for both gender and ethnic diversity are 12 percent more likely to outperform all other companies in the data set."




DIVERSITY, EQUITY & INCLUSION

Institute (PMI) found that the cost of rework in systems engineering projects can be as high as 30% of the total project cost. Poor requirements engineering practices contribute significantly to the need for rework. In a survey of systems engineering professionals by INCOSE, 54% of respondents reported that requirements management was the most challenging aspect of systems engineering. All the above data points resonated with the audience, and they shared some of their current struggles despite having an organization wide requirements engineering process and a formal tool environment.



SWE conference received diverse participation with respect to industry representation and experience range. Stueti along with her co-speaker, wrapped up the session with takeaways such as what an early career professional or a system architect or an engineering leader, can do to contribute to good requirements and adherence to requirements engineering process. To participate in a WE Local Conference, you can visit this website to find one near your location, <https://welocal.swe.org/>

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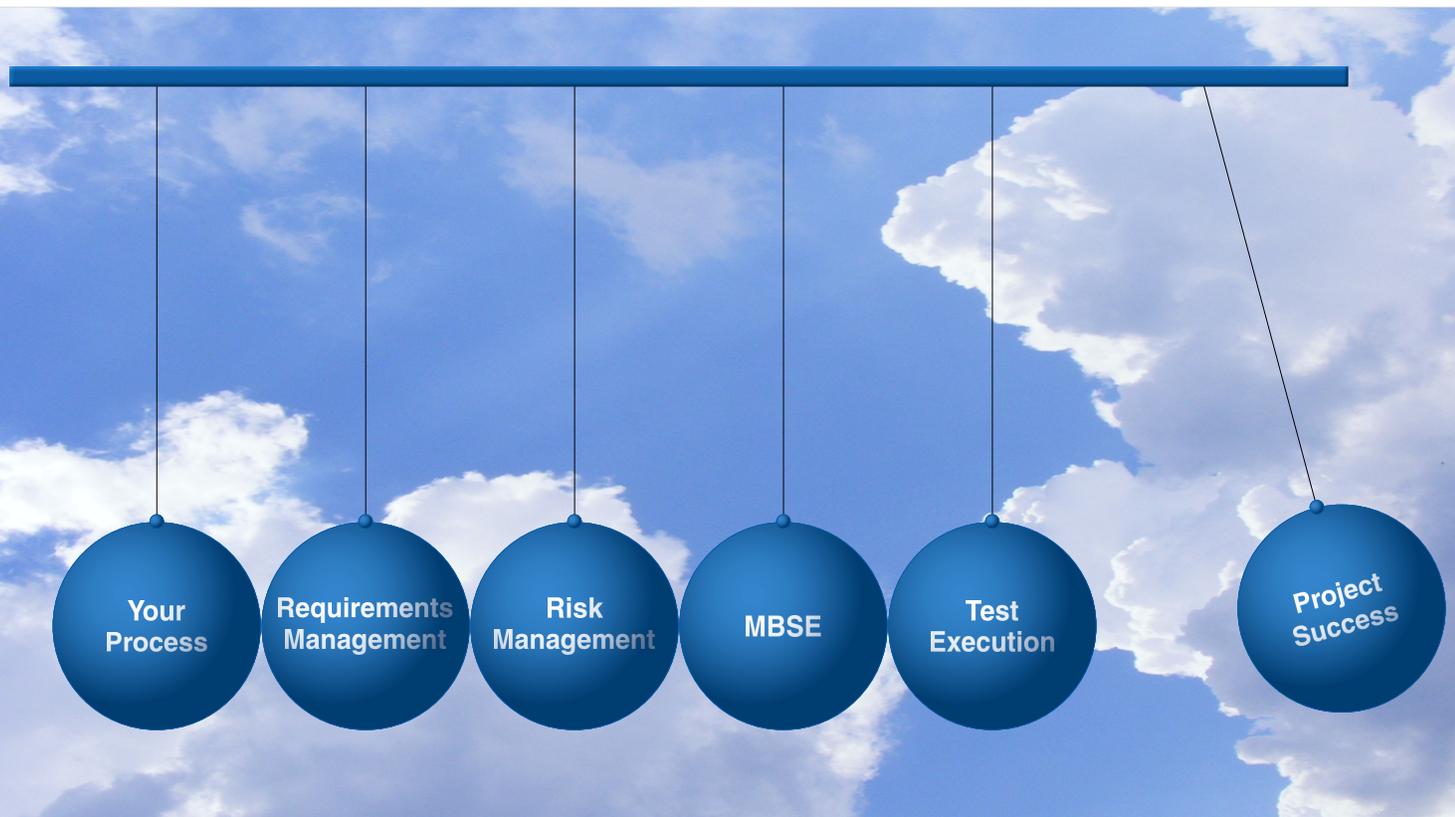
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FuSE Initiative Paves the Way to Reach Goals of SE Vision 2035



“The future belongs to those who prepare for it today,” said Malcolm X in 1962. If that’s the case, then the future belongs to systems engineers.

The INCOSE Future of Systems Engineering initiative – FuSE – began officially in 2018, but it is really getting its moment in the sun at IW 2023 in California. According to the IW planning team, “The IW 2023 goal is to frame the structural relationships, workflows, cadence and value models to realize the SE Vision 2035.”

“The goal is to realize the vision,” said William Miller, FuSE lead. “Just because we published the vision doesn’t mean it’s going to happen. We need to be proactive in ensuring that the vision is going to happen.”

The SE Vision 2035 has roadmaps to “grand challenges.” Thomas McDermott, INCOSE director of strategic integration, said, “Our discipline is in a major transition. That transition is being driven by digital technologies primarily, and will continue to be.”

“Think today in terms of the global context of systems engineering, the scale of systems, the interconnectivity of everything,” Miller said. “Everybody is a stakeholder. How do we engineer systems to behave the way we want them to behave with all of these factors?”

One of the goals of SE Vision 2035 is to expand research. The FuSE team advanced this initiative with the publication of SE Principles earlier this year.

One of the objectives for the research is that it should be “practicable,” according to Miller. *“Research should be directed at recognized problems, not just somebody in an ivory tower speculating about something.”*

Visions and Roadmaps

The Systems Engineering Vision and Roadmaps stream continuously refines, evolves, and complements the SE Vision 2035. The intermediate stream goal is to frame the structural relationships and value models to support the roadmaps creation.

Foundations

The SE Foundations stream has its basis in both theory and industrial practice. The intermediate stream goal is to assess the adequacy of the foundations and identify gaps to determine future directions.

The FuSE team has other goals as well.

“When we think about what FuSE looks like, it ought to be informing in INCOSE on where to focus its strategies in the changing world,” McDermott said. IW2023 is a place for INCOSE members and working groups to do just that.

In preparation, McDermott suggests that members read the SE Vision 2035 and familiarize themselves with the grand challenges and the implementation roadmaps.

“[Identify] real things that INCOSE can work on within its membership,” McDermott said.

“We can really contribute as an organization to solve grand challenges,” said Tom Strandberg, the

FUTURE OF SYSTEMS ENGINEERING (FUSE)

Methodologies

The SE Methodologies stream guides the advancement of practices, methods, and tools for engineering systems to be fit for purpose at the scale, interrelatedness, complexity, non-determinism, and emerging technology innovations such as AI and agility.

Application Extensions

The SE Application Extensions stream integrates social sciences, soft systems, as well as initiatives such as Smart Cities to address grand challenges to meet human and societal needs as stated in the United Nations Sustainable Development Goals.

FuSE stream lead in SE application, said, *"We need to broaden the application of systems engineering in new domains. I think the world has come to the insight that we need systems thinking. Particularly, we need to take a systems approach to solve our problems."*

Beyond IW2023, the FuSE team has even bigger plans. *"In the next year or two, I think success for me would be that systems engineering is more on the agenda of governance and influential organizations,"* Strandberg said.

Ultimately, he said he wants to see INCOSE at the World Economic Forum. *"It's important that INCOSE is seen and heard in that kind of a context where we can bring our knowledge and experience in how to solve grand challenges that we have facing us today,"* he said.

By Beth E. Concepción

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FuSE Leadership Team Makes Progress on Fulfilling SE Vision 2035

The annual INCOSE International Workshop in January (IW2023) focused on FuSE, the Future of Systems Engineering, to realize the Systems Engineering Vision 2035

FuSE officially began at IW2018 and now has more than a dozen projects ongoing within various working groups and initiatives: [Agile Systems and Systems Engineering](#), [Artificial Intelligence Systems](#), [Complex Systems](#), [Human Systems Integration](#), [Smart Cities Initiative](#), [Systems Science](#), [Systems Security Engineering](#), [Systems Engineering Principles](#) Action Team, and the Fellows update of [Systems Engineering Heuristics](#). FuSE also includes outreach to the broader systems community, such as the Institute of Electrical and Electronics Engineers (IEEE), the International Society for the Systems Sciences (ISSS), and the International Ergonomics Association (IEA).

“The goal is to realize SE Vision 2035,” said William Miller, FuSE lead. *“We have to have feasible and measurable indicators of gauging our progress. Based on those indicators, we need to take proactive means to get there. The SE Vision 2035 updates the SE Vision 2025 published in 2015, but it is impossible to be clairvoyant about the future. We need to be refining the Vision as we proceed. We are tracking a moving target.”*

The FuSE mission is ambitious:

- Engage and inspire the systems community for sustaining the future of systems engineering in realizing the SE Vision 2035.
- Refine and evolve the SE Vision 2035 across competencies, research, tools and environment, practices, and applications.
- Identify critical gaps toward the vision realization, and initiate and support relevant actions.
- Foster involvement and collaboration within and outside of INCOSE.
- Educate, share success, and expand.

FuSE projects are clustered into four streams: Vision and Roadmaps, led by Paul Schreinemakers; Foundations, led by Oli de Weck and supported by Joshua Sutherland; Methodologies, led by Chris Hoffman; and Application Extensions, led by Tom Strandberg. The team aims to recruit co-leads for each of the streams from members of the systems community outside of INCOSE, as well as stream teams with whom to work closely.

SE Vision and Roadmaps Led By Paul Schreinemakers



The SE Vision and Roadmaps stream continuously refines, evolves, and complements the SE Vision 2035. The Vision and Roadmaps team took inventory of all the input during the stream-related sessions at IW 2023 and EMEA WSEC 2023, held a mini-event to collect information on the engineering challenges and suggestions for refining near-term targets, and is formulating a process for evaluating and processing refinements and complements to SE Vision 2035.

SE Foundations Led By Oli de Weck



The SE Foundations stream has its basis in both theory and industrial practice. The team has formulated a strategy based on quantification, experimentation, and working with other streams to operationalize the findings. The team plans to present the results of complexity experiments conducted at IS 2023 and EMEA 2023, as well as a paper on Complexity Measures. The team also plans to expand experiments to cover other aspects of systems and systems engineering.

SE Methodologies

Led By Chris Hoffman



The SE Methodologies stream guides the advancement of practices, methods, and tools for engineering systems to be fit for purpose. The team strives to have action show up along this continuum: Discussions >

Activities > Presentations > Panels > Papers > Periodicals > Products > Practices > Standards. The goal is an intentional movement from talking about ideas to producing tangible products. Since IW2023, the team has held three workshops to elaborate on methodology gaps, prioritize them, and then propose paths toward realizing SE Vision 2035. A wide demographic of individuals participated from around the world and across several professional organizations.

SE Application Extensions

Led By Tom Strandberg



The SE Application Extensions stream integrates social sciences and soft systems into systems engineering practice to address grand challenges. The SE Application Extensions team has taken the

approach to identify topics that can mobilize initiatives that can contribute to the realization of the SE Vision 2035 Roadmap. These topics include Smart Cities, Innovation, Grand Challenges, and Asset Management. The team hosted a webinar with about 300 participants in April. Representatives from INCOSE, the Institute of Asset Management (IAM) and the Australian Asset Management Council (AMC) are compiling the results from the webinar and developing a proposal for a joint initiative. The team also held a workshop on the topic of Climate Change at EMEA WSEC. The workshop was held the last day of the conference and two days before the highest temperature ever in April in Spain was noted in nearby Cordoba. The plan is to create a Sustainability working group, which may be set up at IW 2024.

FUSE has established a Program Management Office supported by 3DSE (Martina Feichtner and

Stephan Finkel), with executive oversight by President-elect Ralf Hartmann, Director for Strategic Integration David Long, Technical Director Olivier Dessoude, and Deputy Technical Director Erika Palmer and newly appointed Executive Director Steve Records

The leaders have learned they have to balance administrative work with the need to produce products and events. *"We think we have very ambitious goals for FuSE,"* Feichtner said. *"But we've already achieved a lot, and you can see it."*

The group has determined seven key success factors:

- **Inclusive:** From limited participation to inclusive initiative
- **Attractive:** Engage members and non-members
- **Implementation:** The degree to which the road map is realized
- **Fresh:** Relevant and updated road map and context
- **Close to application:** Involvement of companies and domains
- **Global promotion:** Attractive global digital marketing
- **Passion:** To get the working groups proud to be part of it

Engaging members and non-members is one of the top priorities. *"We're trying hard to make FuSE as open as possible,"* Feichtner said. *"We want to get people involved and guide them to make topics fit the vision."*

FUSE is proudly sponsored by:



Calling All Leaders: INCOSE Board Positions Open

Election time is coming up again! INCOSE is seeking volunteers for a variety of positions, including five board positions: President-Elect, Chief Information Officer, Treasurer, Director for Outreach, and Sector Director for Asia-Oceania

Past President Kerry Lunney held two of these positions – Sector Director for Asia-Oceania and President-Elect – on her way to the top spot.

“Board service is important as it provides you a platform where you can influence outcomes, help set future directions, expand the outreach of our community, as well as share and increase your own knowledge and leadership skills,” she said. “You will have new experiences mixed with an element of fun.”

Lunney said she volunteers for two reasons: to pay it forward and to learn as much as she can.

“I have benefited so much from having a great career working in Systems Engineering and/or related fields and I feel it is important to share my experience and impart any wisdom I may have gained,” she said.

“Secondly, I still want to learn and what better way is there to make this happen than to be part of group that is helping to shape the future in our field and is constantly adjusting and readjusting to meet the demands of an ever-changing world.”

If you are interested in reaping the personal and professional rewards from volunteering, sign up now.

By Beth E. Concepción



[Volunteerism Webpage](#)

HELP SET THE STANDARDS IN THE FIELD OF SYSTEMS ENGINEERING FOR THE GLOBAL COMMUNITY

Join the INCOSE Board

There are several volunteer board positions coming up for election and now is the time to submit your application. The positions up for election are:

- President-Elect
- Director for Outreach
- Sector Director, Asia-Oceania Sector
- Treasurer

Application Deadline: August 6, 2023

Visit incose.org/volunteer

 **(Korea) KOSSE**

The 2023 Korea Systems Engineering Spring Symposium took place June 1-2 at Lakai Sandfine Resort in Gangneung City.

This symposium explored the topic of Future Industry, Global Urban Ecosystem. Below is the event schedule which highlights what took place.

June 1

Congratulatory Remarks: Governor, Vice Minister of Industry, President of Hallym University, Member of the National Assembly, 4 keynote lectures, 13 paper presentations and 1 panel discussion.

June 2

3 special sessions and 54 paper presentations.

By Joong-yoon Lee, KOSSE Chairman



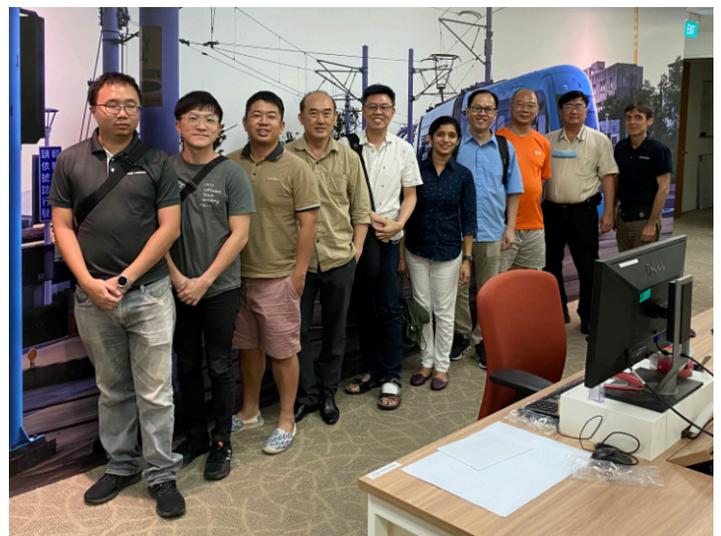
 **(Singapore) INCOSE Singapore**
SINGAPORE

The Singapore chapter is excited to introduce the newly elected members of our esteemed committee! Their dedication and expertise make them invaluable assets to INCOSE.

We are delighted to welcome a group of talented individuals who are currently undergoing training to become key office holders. They are eager to learn, contribute, and make a positive difference. We are confident that their dedication and commitment will help shape our organization's future.

Stay tuned for more updates in the next newsletter as we continue to make strides towards our shared goals.

By Alex Yap, INCOSE Singapore Chapter Secretary





(Brazil) INCOSE Brasil

On April 12th, INCOSE Brasil successfully held its annual general meeting with Brazilian Systems Engineering community, via Zoom.

The goal of this meeting is to update members and non-members of the latest initiatives of INCOSE in Brazil and internationally, as well as open a channel for questions and feedback on how INCOSE is serving our community.

After an opening speech by INCOSE Brasil President, Ricardo Moraes, we had the pleasure to hear from Steve Records, INCOSE's new Executive Director, and Honor Lind, INCOSE Marketing and Communication Director, speaking about INCOSE initiatives worldwide. Their overview attracted a lot of interest with participants asking many questions on different topics. The content was

then followed by chapter leaders briefing on status and initiatives from different areas, with a special mention for our steady membership growth, approaching the highest number ever recorded in our 11 years of existence; result of a strong engagement of chapter leaders and volunteers, to whom we are very thankful.



(USA) Colorado Front Range

The Colorado Front Range Chapter had a Member Chapter meeting on May 17. It was a fun get together at the U.S. Air Force Academy, hosted by Lt Col Jeff Newcamp at the Academy's Planetarium.

The Planetarium was a great venue to watch a movie about the Apollo 11 movie which compiles several video clips from the actual event leading up to the Saturn V launch in July 1969 with the astronauts that landed on the moon and returned to Earth. After the movie, Russell Peak, from Georgia Tech gave a presentation on MBSE application for UAV development. The Chapter Members also were able to view several Posters on display from AFA students in the Systems Engineering Program.





EMEA WSEC 2023 Highlights

On behalf of the EMEA WSEC 2023 organizing committee, we thank you for participating in the most representative event of INCOSE EMEA in 2023.

This year it was a unique event combining the conference and the workshop in Seville, Spain. It was an effective forum for academicians, researchers, and practitioners to advance knowledge, research, and technology aligned with the INCOSE SE Vision 2035 for a better world, with a theme inspired by the vital role that Systems Engineering can play in achieving the United Nations Sustainable Development Goals (UN SDGs); targeting Societal Challenges, and focusing on highly complex systems. One of the central ideas of the event was to exchange ideas and create networking within INCOSE EMEA, especially after the pandemic years we have had. The agenda covered many exciting topics related to theoretical and practical aspects of sustainability, including but not limited to Systems Engineering in a Sustainable World. Furthermore, social events allowed attendees to exchange thoughts with colleagues and create memories with them.



Our chosen theme of sustainability has resulted in high engagement from across the systems engineering community. It signals a call to action for systems engineering practitioners to help solve some of our most significant global issues. Now is the time to find our voice to ensure a better world

for the future. We are genuinely proud of the diverse program that we put together and that we were able to provide both an in-person and virtual offering to maximize the interactions while remaining inclusive to those who cannot travel. An excellent occasion we had, enabling professional and social exchanges with friends and colleagues, both old and new.

Organizing Team

We had a wonderful organization committee, the right size, diverse, and everyone pulled in the same direction. I, Anabel, am proud to have had this journey with them. Thank you, Team!!!!

- EMEA Director, Sven-Olaf Schulze, Germany
- Event Chair, Anabel Fraga, Spain
- Program Chair, Peter Graham, UK
- Technical General Chair, Louwrence Erasmus, South Africa
- Technical Workshop Chair, Jean-Claude Roussel, France
- Technical Conference Co-Chair, Omar Hammami, France
- Technical Workshop Co-Chair, Luca Paladino, France
- Sessions Chair Coordinator, Carlo Leardi, Italy
- Student Outreach, Tom Aldous, UK
- Advisor/Historian, Cecilia Haskins, Norway
- Financial Chair, René Oosthuizen, South Africa
- Communications and Quality Chair, David Ward, Italy
- Website, Social Networks and Teams Manager, Luis Andrés Olmedo, Spain
- Master of Ceremony and Facilitator, Marco Di Maio, Switzerland
- KMD Event Manager, Karin Moens

Program Highlights

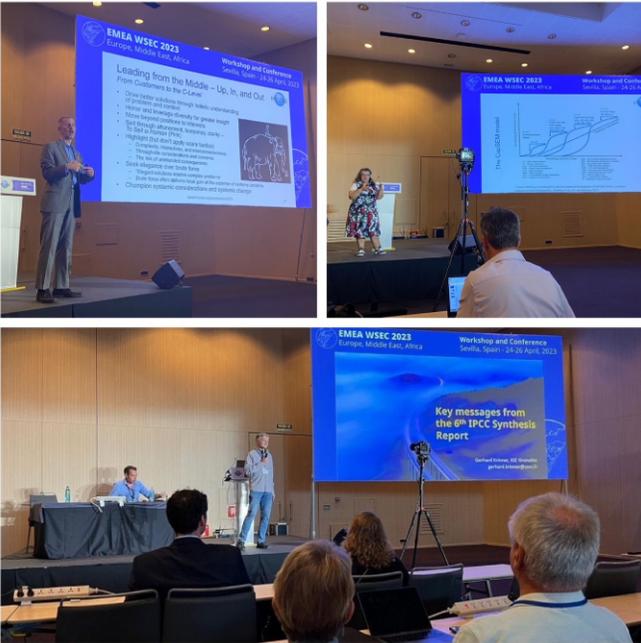
During the EMEA WSEC 2023, we had several challenges because it was the first time we combined the conference and the workshop, and it became a challenge. But considering the strong team and the robust program, success was guaranteed. The program consisted of six tracks

CHAPTER UPDATES: EUROPE, MIDDLE EAST & AFRICA (EMEA) SECTOR

every day, one of them virtual only and one hybrid. At the end of the event, we had 18 tracks fully booked from 8:15 in the morning until 17:00 in the afternoon, with a social event on Tuesday and an ice break on Monday after the event.

Three plenary keynotes were of high quality, evaluated by our audience as 81% top ranking:

- Gerhard Krinner. Directeur de recherche, CNRS – IPCC
- Cecilia Haskins. Associate Professor of Systems Engineering. NTNU and USN
- David Long. President, Blue Holon



FuSE sessions were organized in person and hybrid during the three days of the event, allowing the EMEA event delegates to participate in the Future of Systems Engineering and include Sustainability in this journey.

A SEP exam was offered during the event, in person, to increase the opportunities for any System Engineer to try the exam and become certified.

Special thanks to our sponsors Jama, ULMA, INDRA, The Rese Company, Tom Sawyer, ISDEFE, SE-trec, SE Training, MathWorks, PPI, 3DS, and Top Team Requirements; they helped us as well to make this event a reality with the lovely audience we had. See the full list of sponsors on the event

website ([click here](#)). A lot of Systems Engineers were interested from EMEA and worldwide.



Some Feedback From the Audience

More than 178 people attended the event, mostly in person. And it was lovely to see that more than 80% rated the event outstanding or excellent, 17% will be coming back in person to EMEA events, 15% will be coming back virtually to EMEA events, and all were interested in future INCOSE events.

Technical content was rated the top reason to attend for 86%, and networking was 75%. Some people participating for the first time in an INCOSE event commented: "Considering the quality of the event they will attend more events in EMEA and worldwide".

By Anabel Fraga, on behalf of the EMEA WSEC 2023 Organizing Committee, emea-events@incose.net



Fun Fact

The event's audience was made up of 22 nationalities, speaking more than 25 languages! France and Spain were the countries with the most participation, followed by the USA, UK, Germany, and The Netherlands. Also, it was interesting to have people from Saudi Arabia, Korea, Portugal, and Australia among others!

Nordic Systems Engineering Tour

Twenty people joined the Nordic systems engineering (NoSE) tour in Oslo on 24th May 2023. The event is organized by the INCOSE Norway chapter (NORSEC) as part of the spring tour.

In Oslo, Satya Kokkula, CSEP, the chapter president, welcomed everyone. Erika Palmer delivered an audience-pleasing presentation on her experiences “From the US to Norway and back again: a Systems Engineering Tale.” Next, Todd Wohling, past president, shared his most recent observations based on actual cases with “Requirements & Architectural Abstractions: Writing Requirements at the proper level.”

After lunch, Kjell Bengtsson, VP Jotne, challenged us with his presentation on “Digital Twin and the need for open, public available and international standards.”

The day closed with a topic completely new to the NORSEC audience with their dissemination of research results from “Exploring the context of System Engineering in an E-LAND project - (Integrated multi-vector management system for Energy isLANDs)” delivered by Smart Innovation Norway who were Technical Leaders for the Horizon 2020 project (elandh2020.eu).

The program for the entire three-day tour can be found at [Program Nordic Systems Engineering Spring Tour 2023 - Nordic Systems Engineering Tour \(nordic-systems-engineering-tour.com\)](http://Program Nordic Systems Engineering Spring Tour 2023 - Nordic Systems Engineering Tour (nordic-systems-engineering-tour.com)). The next event in Norway is our annual KSEE 2023 from 14-15 June.

By Cecilia Haskins

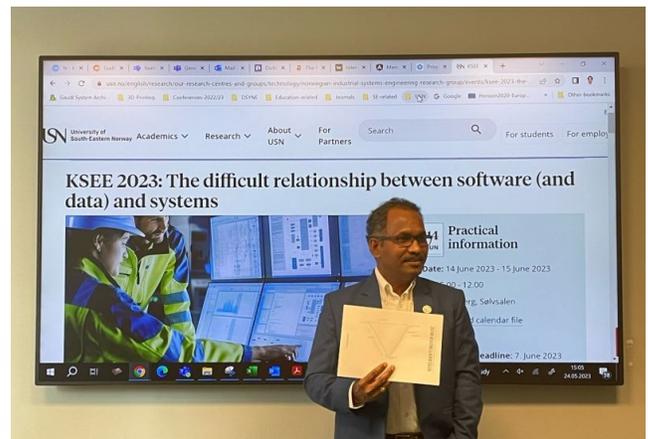


Photo credit: Kirsten Helle.



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12th Nordic Systems Engineering Autumn Tour

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(UK) INCOSE UK



ASEC 2023 Location Announcement

We are pleased to announce that INCOSE UK's Annual Systems Engineering Conference (ASEC) 2023 will be taking place at Spaces at The Spine, Liverpool, UK on 21st and 22nd November 2023.

With excellent rail and road connections as well as an international airport, Liverpool is the ideal location to host ASEC 2023. The city has a rich cultural and historical heritage, offering opportunities for exploration during free time. It also has a long-standing maritime history, which has played a significant role in shaping the city's identity. Its strong links with engineering and thriving port make it an excellent destination for ASEC 2023.

Registration for ASEC 2023 will be opening soon. In the meantime, visit the event website to find out more at www.asec2023.org.uk. Sponsorship and Exhibitor opportunities are now available.

We look forward to welcoming you in Liverpool for ASEC 2023.

Endorsed Training Provider Event



INCOSE UK is delighted to offer a selection of endorsed virtual training courses this year. The intention is to offer virtual courses in September, January and March, the first of these will be taking place in June.

From the 27th to 29th June, Scarecrow Consultants Ltd will be running "The Absolute Beginner's Course on MBSE". This is a complete overview of MBSE and how it can be used in your business. This three-day course covers: MBSE in One Slide; evolution of MBSE in your organisation; structural

& behavioural modelling; using modelling to capture different views of a system; ontologies and frameworks; standards mapping; needs modelling; framework definition.

This will be held virtually using the Teams platform and can be booked via the [INCOSE UK website](http://www.incoseuk.org).

By INCOSE UK Secretariat,
publications@incoseuk.org

Don't Panic! The Absolute Beginners Guide to MBSE – Japanese Translation.



The Japanese Translation of "Don't Panic! – The Absolute Beginner's Guide to Model-Based Systems Engineering" is now available to purchase as an eBook through the [INCOSE UK Online store](http://www.incoseuk.org) and is the first INCOSE UK publication to be translated to Japanese.

This book is the first of the Don't Panic! series and aims to provide an honest, straightforward and simple introduction to the world of Model-Based Systems Engineering that almost anyone can understand. It is co-authored by Jon Holt and Simon Perry.

Jon is an international award-winning author and public speaker; he is also the current Technical Director of INCOSE UK. Simon holds bachelor's degrees from both the University of Leeds and the Open University, often speaks at Systems Engineering conferences and is the author of six books on Systems Engineering and related topics.



Chapter Newsletters



Italy: AISE Newsletter



Michigan: INCOSE Michigan Highlights



France: Lettres AFIS



UK: ePreview



Switzerland: SSSE Newsletter



San Diego

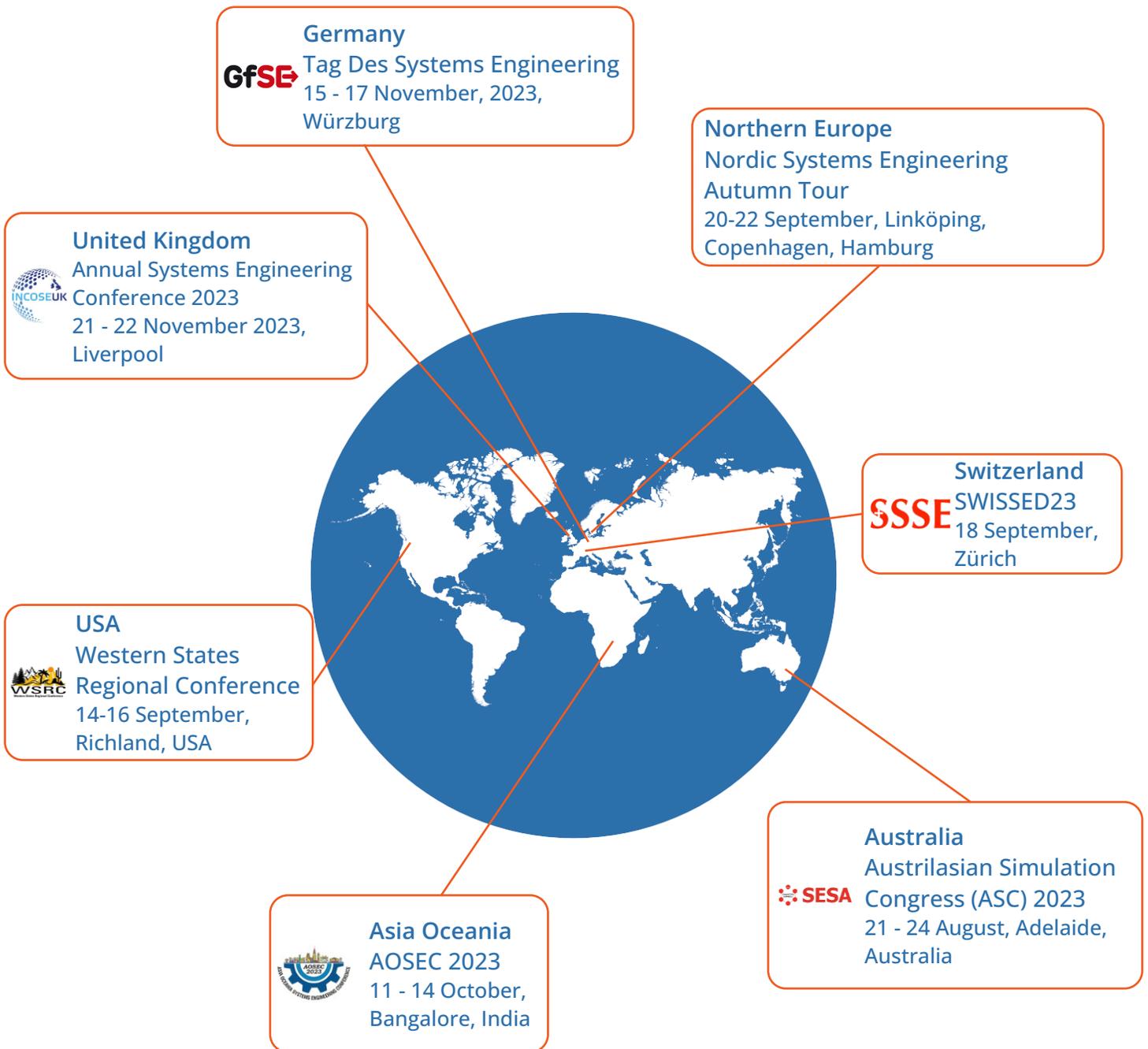


Spain: AEIS Newsletter



Global: INCOSE Members Newsletter

Chapter Conferences



INCOSE at NAFEMS World Congress 2023

The bi-annual NAFEMS World Congress (NWC) 2023 conference was held at the Tampa Convention Center, in Tampa, Florida from May 15th through May 18th, 2023.

NAFEMS is the International Association for the Engineering Modelling, Analysis and Simulation Community. Our booth was attended by Phyllis Marbach and Valkand Jhaveri (VJ). Ms. Marbach is the Assistant Director of the Transformational Working Groups (WGs) on our Technical Operations Team and participates in the joint NAFEMS-INCOSE Systems Modeling and Simulation Working Group (WG).

The NWC 23 was attended by an international audience. Our booth had very good traffic and good inquiries about INCOSE. Some of the visitors to the booth were INCOSE members and inquired about System Modeling showing interest in the SE Vision 2035 and our INSIGHT Magazine. We had

about 35 attendees interested in INCOSE who provided their names with details.

By Valkand Jhaveri and Phyllis Marbach



INCOSE Texas Chapter at MBSE Cyber Experience Symposium



INCOSE was proudly represented at the MBSE Cyber Experience Symposium NAM 2023 by Seth Sherman, Danyel Fiet and Dawn Handley, CSEP, from the North Texas Chapter.

The symposium took place in Allen, Texas, May 22-25. The INCOSE booth had a steady stream of visitors interested in speaking about how to connect with INCOSE.

By Dawn Handley, CSEP

Cultural Differences in Professional Competencies

This article explores research-grounded cultural differences in the INCOSE Professional Competencies of Communications, Ethics and Professionalism, Technical Leadership, Negotiation, Team Dynamics, Facilitation, Emotional Intelligence (EI), and Coaching and Mentoring as described in the INCOSE Competency Framework (Presland, ed., 2018). Preference was given to research specific to engineering; science, technology, engineering, and mathematics (STEM); or research and development, where available

I briefly summarize some of the findings from the literature, particularly those that can be understood in the context of Hofstede et al.'s (2010) cultural model, which provides a lens to help understand other cultures. Hofstede's cultural dimensions include power distance or the extent to which less powerful members of institutions within a country expect and accept that power is distributed unequally; individualism versus collectivism or group focus; uncertainty avoidance, which is the extent to which members of a culture feel threatened by uncertain or unknown situations; masculinity versus femininity or the desirability of assertive behavior against the desirability of modest behavior; time orientation, which is whether the culture takes a long-term or a short-term view; and indulgence versus restraint. I then outline implications of the findings for selecting systems engineers and for forming multidisciplinary/multicultural teams.

When considering the research findings, it is important to recognize that they do not apply universally; further, one should not stereotype people from different cultures according to them (LeBaron 2003). (The same can be said about people of different genders [Lieberman 2017].) Whether a generalization holds true depends on many contextual factors, including setting, situation, time, the nature of the issue, and individual preferences (LeBaron).

First, my most obvious conclusion: there is nothing in the literature to suggest that people from one culture are "better" at the Professional Competencies or will be more successful at applying them than people from another. They are just different! Grosse and Simpson (2008) make the point that one style is not better than another – all have positive and negative aspects, suggesting people from any culture can succeed if they are able to leverage their positives and minimize their negatives when applying the Professional Competencies in the practice of Systems Engineering (SysE).



It should also be noted that most of the research on cultural differences on the professional competencies is derived from Western concepts rather than from an intercultural perspective (LeBaron 2003). Because of this, the generalizations that follow from these studies are limited (LeBaron).

First, my most obvious conclusion: there is nothing in the literature to suggest that people from one culture are "better" at the Professional Competencies or will be more successful at applying them than people from another. They are just different! Grosse and Simpson (2008) make the point that one style is not better than another – all have positive and negative aspects, suggesting people from any culture can succeed if they are able to leverage their positives and minimize their negatives when applying the Professional Competencies in the practice of Systems Engineering (SysE).

In looking at Proof Point University Business Department's (2017) description of high- and low-

context cultures as regards Communications, one sees that there are elements related to individualism versus collectivism, uncertainty avoidance, and indulgence versus restraint embedded within them.

As regards Technical Leadership, Van Duesen et al. (2002) found that cultural differences were driven by individualistic versus collectivist perspectives. Jonasson and Lauring (2006) attribute cultural difference in Ethics and Professionalism to individual versus group orientation. Scholtens and Dam (2007) add masculine versus feminine orientation, power distance, and uncertainty avoidance to the list of drivers of cultural differences in this area. Understanding cultural differences is especially important with respect to business ethics, where mismatches between values of countries or industries may make international business difficult (Kerzner, 2017).

Power distance, uncertainty avoidance, and masculinity versus femininity all contribute to

cultural differences in Negotiation (LeBaron, 2003).

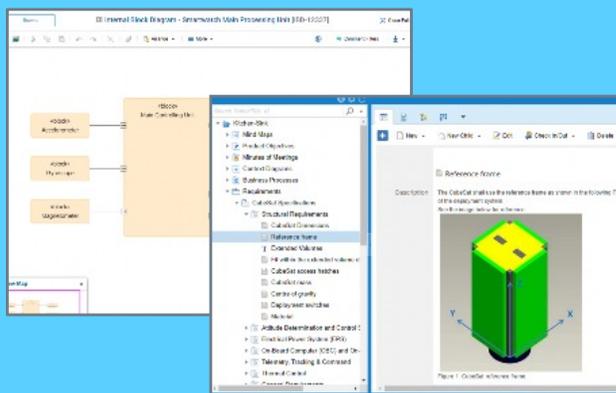
Cultural differences in Team Dynamics are rooted in societal differences in group versus individual orientation (Solomon, 2018) and power distance (Neeley, 2015).

Jelavic and Salter (2014) note that cultural differences in Facilitation come from masculine versus feminine orientation, high versus low power distance, short- versus long-term and orientation.

EI was not explicitly linked to any of Hofstede et al.'s model elements, but because EI is related to so many other of the Professional Competencies, it is indirectly linked to many of Hofstede et al.'s elements.

Finally, cultural differences in the Coaching and Mentoring competency are related to differences in power distance. The literature offers some suggestions for guidelines that could be used

Have you tried the Visual Requirements Tool designed for Systems Engineers?



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when selecting systems engineers and when forming and developing multicultural (and mixed gender) systems engineering teams:

- Use gender- and culturally-neutral position descriptions; the position descriptions should be neutral with respect to the value placed on masculine transactional, hierarchical, and agentic styles versus feminine transformational, consensus-building, and communal styles, as well as with respect to preferences for power distance and for individualism over collectivism (or vice versa). Interviewing techniques used in the selection process should be similarly neutral
- When orienting senior staff who will serve as mentors to more junior staff (as is required of lead practitioners and expert systems engineers and noted in the Framework), the training should stress the need to balance role modeling, giving psychosocial support, and providing career advice so that the mentee receives a well-rounded mentoring experience
- Social diversity in teams – gender, ethnic, racial – enhances creativity because it introduces informational diversity (Phillips 2014) and leads to better group processes (Bear and Woolley 2011). In forming SysE teams, it is important to ensure gender parity (similar numbers of men and women) and cultural and racial diversity because it reduces the prevalence of stereotypes thereby countering any negative effects on team performance
- Finally, educate team members about diversity-related differences in communication and leadership styles and unconscious bias, and reinforce the need to avoid stereotyping based on gender, cultural, or racial characteristics and to be conscious of one's use of time and space in one's interactions with others

Following such guidelines should enable an organizational context in which people of all types – cultures, races, and genders, etc. – are equally likely to succeed by leveraging their positives and minimizing their negatives when applying them in the practice of systems engineering and in which the value of systems teams is greatly enhanced, not only relative to group processes but also to team performance. Because the data found in the

literature is not specific to SysE, the effect of following such guidelines would need to be monitored closely.

By Dr. Heidi Hahn - INCOSE Certification Advisory Group and the PMI/INCOSE/MIT Alliance Team

References

- Bear, JB and Woolley, AW 2011, 'The role of gender in team collaboration and performance', *Interdisciplinary Science Reviews*, 36(2), 146-153.
- Grosse, R and Simpson, JER 2008, 'Managerial problem-solving styles: A cross-cultural study', *Latin American Business Review*, 8(2):41-67.
- Hofstede, G, Hofstede, GJ, and Minkov, M 2010, *Cultures and organizations: Software of the mind (3rd edition)*, McGraw Hill: New York, NY (US).
- Jelavic, M and Salter, D 2014, 'Managing facilitation in cross-cultural contexts: The application of national cultural dimensions to groups in learning organizations', *Transformative Dialogues: Teaching & Learning Journal*, 7(1), 1-9.
- Jonasson, C. and Lauring, J. 2012. 'Cultural differences in use: the power to essentialize communication styles', *Journal of Communication Management*, 16(4), 405-419.
- Kerzner, H 2017, *Project Management*, John Wiley & Sons, Inc., Hoboken, NJ (US).
- LeBaron, M 2003, 'Culture-based negotiation styles'. In Burgess, G and Burgess, H (eds.) *Beyond Intractability. Conflict Information Consortium*, University of Colorado, Boulder, CO (US).
- Lieberman, S 2017, 'Gender communication differences and strategies', viewed 17 April 2020
- <<https://www.experience.com/advice/professional-development/gender-communication-differences-and-strategies/>>.
- Neeley, T 2015, 'Global teams that work', *Harvard Business Review*, October, 74-81.
- Phillips, KW 2014, 'How diversity works', *Scientific American*, 311(4), 42-47.
- Presland, I (ed.) 2018, *INCOSE Systems Engineering Competency Framework*, INCOSE, San Diego, CA (US). Copyright Ó2018 by INCOSE.
- Point Park University Business Department 2017, '7 cultural differences in nonverbal communication', viewed 17 April 2020 <http://online.pointpark.edu/public-relations-and-advertising/gender-differences-communication-styles/>
- Scholtens, B and Dam, L 2007, 'Cultural values and international differences in business ethics', *Journal of Business Ethics*, 75:273-284.
- Solomon, C 2018, 'The group dimension: Key to managing multicultural group dynamics'. Accessed 11 May 2020 at <https://www.rw-3.com/blog/key-to-managing-multicultural-group-dynamics>
- Van Deusen, CM, Mueller, CB, Jones, G, and Friedman, H 2002. 'A cross-cultural comparison of problem-solving beliefs and behaviours: helping managers understand country differences', *International Journal of Management and Decision Making*, 3 (1), 52-66.

Spotlight on Cliff Whitcomb



in the Navy.

Cliff Whitcomb is a seasoned professor and scholar, but that's actually his second career. His first – a Submarine Warfare Officer and Engineering Duty Officer in the U.S. Navy – led to the second as he went to graduate school to be qualified to be an engineer

It was only natural. His first degree was a B.S. in Engineering from the University of Washington. Later, he earned both a Naval Engineer degree and an S.M. in Electrical Engineering and Computer Science from M.I.T., and Ph.D. in Mechanical Engineering at University of Maryland.

His Naval career fostered Whitcomb's interest in Systems Engineering.

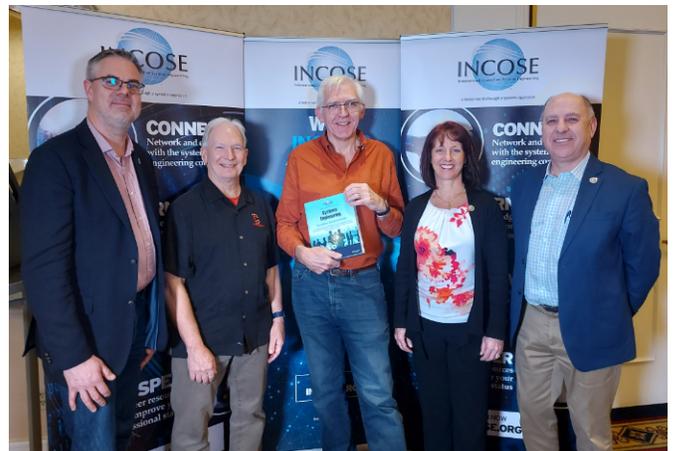
"When I started working on the context of naval architecture and marine engineering and ship design, I realized how multidisciplinary that was -- that you couldn't understand just one thing about it," he said. "You had to understand things about the ship itself, how it worked in the environment, what the customer wanted, and how to balance all these characteristics. It really caught my interest to look at the fact that there was this multidimensional problem. It ended up being an interesting and unexpected perspective."

Whitcomb now serves as Professor of Practice in the Systems Engineering Program at Cornell University. He is a Distinguished Professor Emeritus at the Naval Postgraduate School, and has also taught at the University of New Orleans and M.I.T.

In addition to co-authoring "Effective Interpersonal and Team Communication Skills for Engineers" published as part of an IEEE Series by John Wiley and Sons, Whitcomb serves as Editor in Chief for the INCOSE Systems Engineering Journal and has been busy working on the new Systems Engineering Competency Guide.

Joint efforts like that are why he said he enjoys being in INCOSE.

"It's just the way everybody just seems to collaborate and work together and the exchange of ideas around Systems Engineering," Whitcomb said. "It's a comparatively very new engineering discipline and way of looking at things in a holistic way. The people who built man-of-war sailing ships or even the pyramids might have been systems thinkers in certain way. Though they wouldn't have identified it that way."



Cliff Whitcomb and the Competency Working Group celebrating the launch to the Systems Engineering Competency Guide at IW2023

Whitcomb said he appreciates the dialogue around the discipline.

"What are systems and what is engineering and when you put them together, how does that create a cohesive Systems Engineering discipline? The most interesting thing to me is the examining and reasoning around that concept," he said. "The willingness of people to work together as groups to tackle different challenges in different contexts and find a way to actually do something with the society instead of just being a member."

By Beth E. Concepción



INCOSE Awards Thirteen Students at the 2023 International Science and Engineering Fair (ISEF)

INCOSE has participated in the International Science and Engineering Fair (ISEF) as a Special Award Organization since 2009 to provide awareness of Systems Engineering for exceptionally talented high school students from all over the globe.



Left to Right: Ethan Mark Zentner, Israa Shawabka , Dr. Regina M Griego and Rohan Singh

This year students were awarded a total of over \$8 million in special awards from 40 organizations and INCOSE provided three cash awards and ten Honorable Mentions that totaled \$11,000 in cash and non-cash awards. Our awards include, a first and second place for the INCOSE Best Use of Systems Engineering, an award donated by the INCOSE Foundation, the INCOSE Bill Ewald Socio-technical Systems Engineering, and ten Honorable Mentions. The first-place winner is invited to the INCOSE Symposium and offered a booth at which to exhibit their project. All other awards including the honorable mention awards are provided a one-year free student membership to INCOSE and free virtual admission to the 2023 or another future International Symposium. INCOSE ISEF Special Awards were in-person this year, as were the student interviews, but judging of projects was done virtually which made all project displays available virtually.

The INCOSE Fellows lead the effort with ISEF and this year there were ten INCOSE members that served as judges, five virtually and five attending the ISEF 2023 event in person. The ISEF was held Dallas, Texas, USA May 15-19, 2023, with the Special Awards announced the evening of May 18th. INCOSE ISEF judges started by targeting ISEF Categories of projects that were likely to have systems engineering content, reviewing around 320 abstracts; from there we narrowed to 67 projects that we were able to visit virtual booths and using qualitative criteria narrowed to 24 projects for which we were able to conduct interviews with students live on May 17th in Dallas. Every project is impressive, and the hardest part of our participation is choosing the winners. We applaud our winners and wish them success.

The INCOSE Best Use of Systems Engineering awards are awarded to the best interdisciplinary projects that can produce technologically appropriate solutions that meet societal needs.

Here are the winners:

INCOSE Best Use of Systems Engineering Award of \$1,500 and free registration and Exhibitor Booth at a future INCOSE Symposium
Awarded to Ethan Mark Zentner from Glendale, WI, USA.

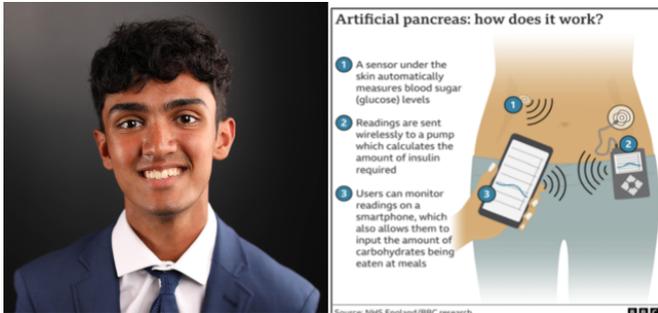


Project title: Design, Construction, and Testing of a Passenger-Capable eVTOL Hexacopter
(<https://projectboard.world/isef/project/120427>)

COMMUNITY UPDATE

Second Place INCOSE Best Use of System Engineering Award of \$800, a 1-year free student membership to INCOSE, and free virtual admission to the 2023 International Symposium of the INCOSE.

Awarded to Rohan Singh from Bentonville, Arkansas, USA



Project title: Optimizing Glycemic Control in Type 1 Diabetic Patients Using a Deep Learning-Based Artificial Pancreas with a Secure Glucagon and Insulin Delivery System
(<https://projectboard.world/isef/project/121902>)

INCOSE Bill Ewald Socio-Technical Systems Engineering Award of \$1000, a 1-year free student membership to INCOSE, and free virtual admission to the 2023 International Symposium of the INCOSE

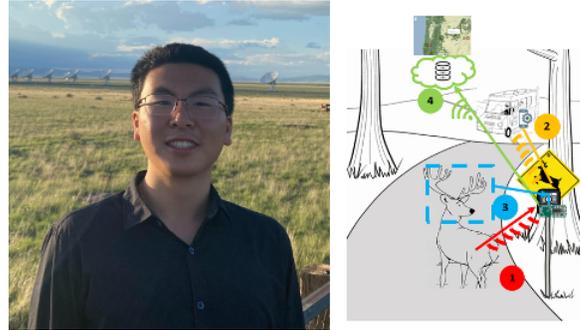
Awarded to Israa Shawabka from Palestine



Project title: Test Yourself by Yourself Breast Cancer Detection Device
(<https://projectboard.world/isef/project/enbm082-breast-cancer-detection-device>)

Ten Certificates of Honorable Mention, each with a 1-year free student membership to the INCOSE and free virtual admission to the 2023 International Symposium of the INCOSE

Awarded to Alan Ma from Portland, Oregon, USA



Project title: Smart Wildlife Sentinel (SWS) – Preventing Vehicle-Wildlife Collisions and Monitoring Road Ecology with Embedded IOT Systems and Deep Learning
(<https://projectboard.world/isef/project/enev083-smart-wildlife-sentinel-sws>)

Awarded to Daniel Kim from Los Alamos, New Mexico, USA



Project title: Underwater Vehicle to Map Ocean Litter
(<https://projectboard.world/isef/project/enev033-underwater-vehicle-to-map-ocean-litter>)



Awarded to Anthony Saturnino from Ontario, Canada



Figure 5: Test Road Figure 6: Complete Robot and Test Road

Project title: Pothole Patrol: Autonomous Pothole Filling Robot
<https://projectboard.world/isef/project/robo051-pothole-patrol-autonomous-pothole-filling-robot>

Awarded to Hendrik Ridder from Bremen, Germany



Project title: RPL: Fully Automated Rocket Launch Pad (Including Mobile App Control, Weather Evaluation and Live Video)
<https://projectboard.world/isef/project/etsd013-rlp-fully-automated-rocket-launch-pad>

Awarded to Benedek Barna from Budapest, Hungary



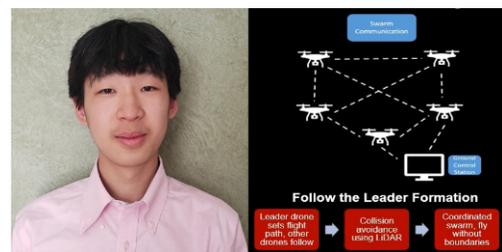
Project title: Developing a Motorized UV Illuminator Device for Photochemical Ligand-Binding
<https://projectboard.world/isef/project/etsd004-motorized-uv-illuminator-device>

Awarded to Rafaela Ribas from Parana, Brazil



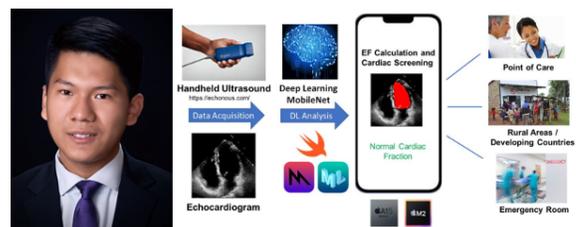
Project title: Organ Box: The Use of the Technology to Aid in the Transport and Tracking of Organs in the Transplantation Process
<https://projectboard.world/isef/project/enbm002-organ-box>

Awarded to Richard Lian from Louisville, KY, USA



Project title: Decentralized, Autonomous Drone Swarms for Real-Time Mapping Applications and Natural Disaster Relief
<https://projectboard.world/isef/project/etsd024-decentralized-drone-swarms-for-mapping>

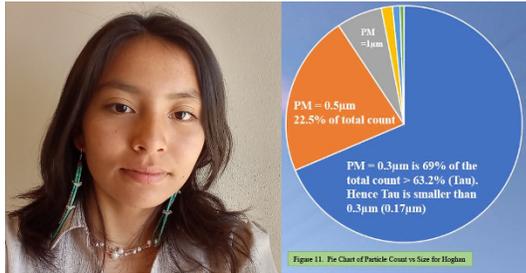
Awarded to Samuel Wang from Fort Washington, Pennsylvania, USA



Project title: Rapid Cardiac Screening Using Deep Learning
<https://projectboard.world/isef/project/robo072-rapid-cardiac-screening-using-deep-learning>

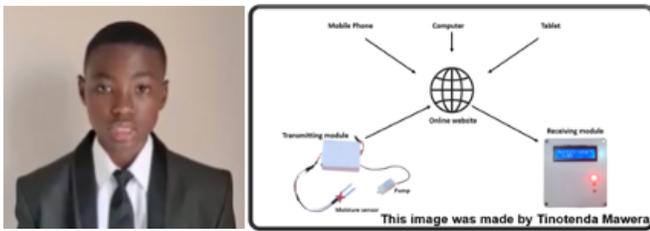
COMMUNITY UPDATE

Awarded to Ember Bahe from Kayente, AZ, USA



Project title: DINE (Digitally INtegrated Environmental) Arduino Platform for Environmental Quality, Safety, and Health (<https://projectboard.world/isef/project/enev064-dine-digitally-integrated-environmental>)

Awarded to Tinotenda Mawera from Zimbabwe



Project title: Automated Irrigation System with Web Application (<https://projectboard.world/isef/project/enev020-automated-irrigation-system-with-web-application>)

Update by Regina M Griego, Ph.D., INCOSE Fellow; contributions by Dorothy McKinney, Eileen Arnold, Shazad Contractor, and Manjunath Chandrasekhar. Thanks also to Mike Sievers, Mike Dickerson, Bill Mackey, Chris McCauley, and Chandru Mirchandani for participating in judging the projects.



School of Systems and Enterprises

Teaching & Adjunct Faculty Positions

The School of Systems and Enterprises (SSE) at Stevens Institute of Technology invites applications for teaching-track faculty positions, starting Fall 2023, as well as qualified adjuncts for a range of ongoing part-time teaching assignments.

Additional consideration for teaching track and adjunct positions will be given to candidates with extensive academic or industry experience in system/software architecture, software development management, cyber security and testing, and cloud computing.

Successful teaching faculty and adjunct professors will contribute to a dynamic and growing educational school that provides students with a research-centered interdisciplinary and transdisciplinary education embedded in systems thinking and design, specifically in the areas of software engineering, systems engineering and complex systems. The individual is expected to deliver a first-class teaching experience that offers undergraduate and graduate students an exceptional, practice-based and research-supported education that translates immediately into expertise that students can take to the workplace. Among the available assignments is the teaching of courses offered through the SSE corporate education program. Industry experience is a plus for these positions. These courses may be offered in in-person and virtual formats with flexible scheduling based on corporate partners' needs and preferences.

Teaching Faculty duties include teaching at the undergraduate and graduate levels, advising and mentoring undergraduate/graduate students, course development and delivery, and contributing service to Stevens and the professional community.

Adjunct faculty will be responsible for teaching one or more courses, holding office hours and participating in course evaluations and assessments. Assignments may include day or evening courses and may be conducted on campus, off-site or online. Adjunct positions are on a semester-by-semester contract basis, and successful acceptance into the adjunct pool does not guarantee an offer of a contract.

Applicants must possess a masters or doctoral degree (doctorate required for teaching faculty) in a related engineering or science discipline and evidence of rich industry experience and successful university teaching experience. Knowledge of applied statistics, applied mathematics, modeling and simulation methodologies, engineering economics and Python a plus. **Experience in software and product development or data science desirable.**

For more information and to apply, visit the Stevens Job Portal at: <https://stevens.wd5.myworkdayjobs.com/External?g=sse>.

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Updates from the Marketing Hub



Harnessing the Power of Social Media: Why Should You Use It?

In today's digital age, social media platforms have become a dominant force in connecting people worldwide. You may be thinking, why should I engage with social media? Below we've listed some of the benefits of posting and engaging on social media platforms.

Build a Professional Network

By actively engaging on platforms such as LinkedIn, Twitter, and industry-specific communities, you can expand your professional network beyond traditional boundaries.

Showcase Your Expertise

By sharing industry-related content, insights, and thought leadership, you can position yourself as a credible professional in your field.

Engage in Professional Discourse

Joining industry-specific groups, participating in Twitter chats, or following relevant hashtags allows you to stay updated on the latest trends, best practices, and emerging discussions in our field.

Amplify Your Initiatives

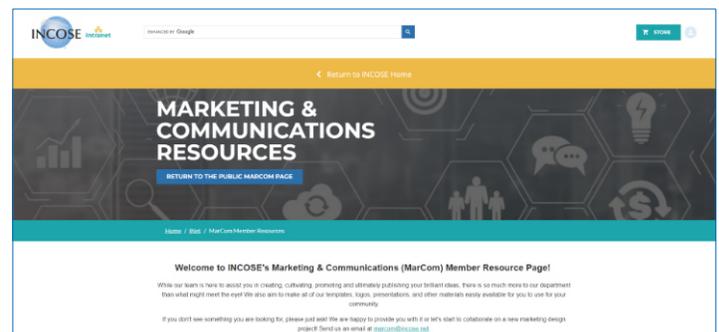
By actively promoting and sharing association events, educational resources, and advocacy campaigns, you can raise awareness and engage a wider audience.

So, why not give it a go? Don't forget to tag INCOSE using @INCOSE on LinkedIn and Facebook and @incose_org on Twitter and Instagram and use the hashtags #INCOSE and #SystemsEngineering.

By Jorge Da Silva, INCOSE Marketing Hub

Welcome to INCOSE's Marketing & Communications Department, The Marketing Hub.

While the Marketing Hub team is here to assist you in creating, cultivating, promoting and ultimately publishing your brilliant ideas, there is so much more to our department than what might meet the eye! We are here to assist in the growth and flourishing of the various INCOSE Communities and the Systems Engineering practice as a whole!



We aim to make all of our templates, logos, presentations, and other materials easily available for you to use for your community. We have made our resources available in the members only [Marketing and Communications Resources Intranet page](#) and encourage you to use them. If you don't see something you are looking for, please just ask! We are happy to provide you with it or let's start to collaborate on a new marketing project! Send us an email at marcom@incose.net.



Follow INCOSE



INCOSE Members Have Access to New Ways to Connect With Each Other



The Services aspect of INCOSE is becoming even more robust under the leadership of Richard Beasley, Director of Services. The three main focus areas are Events, Certification, and Education/Training. It's the first area – Events – where members saw the first change and will see more.

Richard and his team are concentrating on Virtual Communities – enhancing existing options and creating new ones. For example, the Services team runs regular Systems Exchange Cafés, staggered for time zones so that most people have at least two cafés available during waking hours.

Berber Vogt, who works with Beasley on events as Assistant Director, said this is important to her personally.

"I'm from the Netherlands," she said. "It's sometimes difficult to join the events. So if there are events we can do online or provide more information ... it's not the solution, but it will help."

By "information," she means Spotlights, which are multimedia extended conversations about a specific topic in Systems Engineering.

Initiatives like these are why Richard accepted the charge to be the director of the team.

"When Don Gelosh asked me, I thought that would be interesting then I immediately regretted it because it would be a lot of work," Beasley said with a laugh. "The fact that Services is fairly new with some established bits, I thought it might be fun."

One of the things Richard said he wanted to do is to apply Systems Engineering to INCOSE services

the same as lifecycle thinking in product development.

"I would like people to think about how we can actually deliver to the INCOSE members stuff that's valuable," he said. "We envision a better world through a systems approach."

Has Services moved forward in enabling that vision? Do we have more ways of letting people have conversations?"

Thanks to the Services team and all the initiatives, the answer is yes.

By Beth E. Concepción

Virtual Community Webpage

Systems Exchange Cafés

Maple Cafés

11 US Eastern Time

incose.org/maplecafe

Oak Cafés

8 AM London Time

incose.org/oakcafe

Fir Cafés

9 AM Japan Time

incose.org/fircafe

Digital Engineering Information Exchange Working Group (DEIXWG)

DEIXWG is an active working group with products in two general areas: creating international Standards Framework (SF) and building Digital Viewpoint Model (DVM) as an architectural framework.

The SF team is forming an ISO WG to define standards for digital engineering concepts and vocabularies. The DVM team is validating the DVM Concept Model. Both product areas are set to publish technical papers via the TPP process in 2023. DEIXWG is growing and would love to have more active members. If interested, please contact Terri Chan, Acting Chair (terri.chan@incose.net) or Tamara Hambrick, Deputy Chair (tamara.hambrick@incose.net).

By Terri Chan, Acting Group Chair

Mission:

The Digital Engineering Working Group supports the strategic objective of accelerating digital engineering adoption and the role of system engineers in this new paradigm.

Goals:

The Digital Engineering Working Group supports the strategic objective of accelerating digital engineering adoption and the role of system engineers in this new paradigm.



Information Communication Technology Working Group (ICTWG)

The annual International Wireless Communication Expo (IWCE) 2023 was held at the Las Vegas Convention Center, in Las Vegas, Nevada March 27th to March 30th, 2023.



The IWCE conference is for critical communications users – i.e., 911 calls – for Police departments and other emergency calls for Fire Departments. IWCE is part of the Institute of Electrical

and Electronics Engineers (IEEE). The conference exhibitors mostly include service providers,

wireless radios, and supporting equipment manufacturers.

INCOSE's Information and Communication Technologies Working Group (ICT WG) has an alliance agreement with IWCE. Susan Ronning is the Co-Chair of this working group and the alliance Relationship Manager with IWCE. Susan coordinated the INCOSE booth at this expo. The Booth was attended by Susan Ronning, Valkand Jhaveri (VJ), Bill Scheible, and Keith Rothschild on a rotation basis. Molly Kovaka also helped us. Susan and Molly both had a presentation at the conference.

By Valkland Jhaveri





SySTEAM Launches First Mini Conference



A free two-day online event open to all

Register Now

Mark your calendar for SySTEAM's first mini conference July 27-28, 2023. The online conference is free to attend, free to participate in, and is open to the public. Registration is now open.

The event is intended to provide attendees with the opportunity to convene, discuss, and exchange ideas relating to the intersection between systems STEM/STEAM education and systems thinking/systems engineering competencies.

The SySTEAM initiative started about a year ago through an INCOSE board initiative to integrate systems competencies into education.

Caitlyn Singam, SySTEAM Program Director, said it started as SySTEM, but the 'A' for arts was added after a community discussion about the importance of arts and humanities.

"Systems competencies are inherently interdisciplinary, and everyone can benefit from them," Caitlyn said. "Similarly, systems engineering as an interdisciplinary field can benefit from these other fields and the experts who come from them."

Caitlyn said more than 200 people in the INCOSE community have contributed to this initiative, which is manifesting at the moment in the mini conference.

"It's so terribly exciting to have all these different people with all these different backgrounds, ideas – everything," she said. "We are all working towards the common goal of making education better for everyone. It doesn't matter what field you are pursuing, what career you want to have, we think that systems competencies can help you and make you a better global citizen."

Singam said she is excited to see what people will contribute to the conference.

"SySTEAM thrives off the diversity of its community and their ideas," she said.

For more information about the mini-conference, visit the INCOSE SySTEAM website at incose.org/system.

By Beth E. Concepción





PDP Providing More Capability to Users

Since the release of Initial Operational Capability (IOC) in October 2022, INCOSE's Professional Development Portal (PDP, www.incose.org/pdp) has been adding more user capabilities in preparation for the Full Operational Capability (FOC) V1.0 planned for the International Symposium 2023. These new capabilities include new supporting pages, advanced searching capabilities, and more My Bookshelf functionalities.

PDP Supporting Pages

- The PDP supports several INCOSE Products and Services through its six supporting pages:
- PDP & Certification – provides a link to the INCOSE certification pages, describes how the PDP provides background information for the topics in the SE Handbook, certification training providers, and using the PDP to help renew your certification.
- PDP & Future Plans – lists the recommended future capability updates the PDP Leadership Team is considering.
- PDP & Heuristics – provides background information on systems engineering-related heuristics the Fellows Team created that are available in the PDP Content Catalog.
- PDP & Learning Development Plans – contains background information on how to create individual learning development plans and provides the ability to create a professional development completion report for managers.
- PDP & Mentoring – provides general mentoring information and a link to the current mentor-mentee matching pilot initiative.
- Professional Development Discussions & the PDP – provides a link to the Professional Development & PDP Discussions Yammer page

to post discussions, post questions, and conduct polls.

Additional supporting pages are planned in the future.

Advanced Searching Capabilities

Currently a user has filters to find learning resources on the Browsing the Content Catalog page and a separate basic search capability (independently searches by POC (Point of Contact group like certification, SE Handbook, SEBoK, etc., or an author), phrase in the title, and phrase in the abstract) on the Home page. Providing a basic search capability for conference papers and presentations (by event) is in progress. The advanced search capabilities planned by FOC V1.0 include (1) a combined search of POC, phrase in title, and phrase in abstract; (2) searching for new learning resources uploaded since the last visit; (3) searching by the star ratings; (4) searching by date; (5) searching by media type (Book, Course, Paper, PDF, PPT, Video, Webinar, Webpage, etc.); (6) searching by cost (yes / no); and (7) searching by the learning resource language (currently only English is in the PDP, but the future the PDP can have items in other languages). Additionally, the goal is to be able to sort the search results and to have the ability to save search and filter parameters.

My Bookshelf Resources

Currently the My Bookshelf capabilities allows the user to save Learning Resource Results Cards (LRRCs) to their member user profile. The plan for FOC V1.0 is to create three separate My Bookshelf pages (i.e., Just Added, In Progress, and Completed) with the ability for the user to move the LRRC from page-to-page. The next step will be a capability for users to sort each of their My Bookshelf pages by competencies, SEP Experience Areas, ISO 15288 SE Processes in the SE Handbook, and SE Domains in IS Calls for Papers by Date, Author / POC, and / or Title. PDP users can select which areas to sort by (could be

simultaneous sort with a couple areas included, e.g., 1st – competencies, 2nd – SE Processes, 3rd – Date), and if there is more than one learning resource in an area, then they can sort alphabetically per that respective area. After FOC V1.0, the plan is to add completed items from the My Bookshelf to the user’s individual learning plan.

With these supporting pages now and the planned advanced search / My Bookshelf capabilities, the PDP user will be able to do a lot more with their own professional development. But this just takes us to the planned Full Operational Capability (FOC) V1.0 at IS 23. There are more potential enhancements and improvements to the PDP under consideration (see the [PDP & Future Plans supporting page](#)). Stay tuned!

By Kirk Michealson, PDP Project Manager



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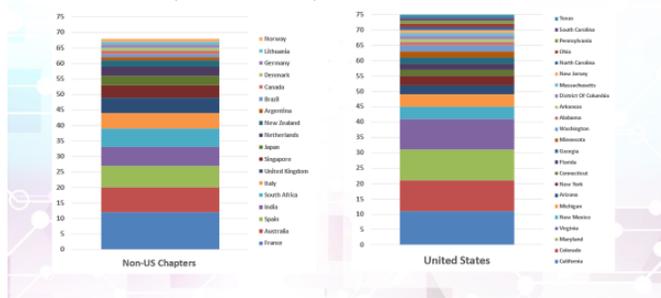
Technical Leadership Institute (TLI) Delivering Success

‘Enabling others to be successful’ is a key behavior of TLI members. So, it is truly inspiring to observe the continued career success of TLI members themselves.

For example, recently we learned that Luca Stringhetti, Cohort 4 member, has been promoted to ‘Head of Engineering’ for the Square Kilometre Array Telescope operating from Jodrell Bank in UK. It has the two largest radio telescope arrays in the world, located in Australia and South Africa, supported by institutions and facilities around the globe. This digitally integrated, internationally funded project budgeted at \$2.2 billion, is a highly innovative project, now in its construction phase.

Members’ leadership journeys extend beyond the initial two-year initial experience. In addition to their professional agency, many members are INCOSE leaders; widening its global reach, penetrating new markets and creating innovative methods and systems models.

TLI Today: A Growing Network of 143 Leaders from 6 Continents, 19 Countries, and 23 U.S. States



The sixteen members of Cohort 7 are nearing the end of their initial two-year experience and will be inducted as full members of the Technical Leadership Institute at the end of June. As part of their journey, they have completed three major projects, two of which will be presented at IS 2023 in Honolulu with the third being matured for wider publication and presentation:

- A Systems View of Career Development for Systems Engineering Leadership

- Future Trends Influencing Technical Leaders and Technical Leadership
- Systemic Model of Leadership Approaches (Working title)

All three projects contribute to the greater body of knowledge as well as Cohort 7’s individual and collective growth as leaders.

As Cohort 7 looks to how they will continue their learning journeys as full members of the Institute, the twenty-one members of Cohort 8 are transitioning from the TLI foundations in year one to a greater focus on topics of specific relevance to them in year two. Based upon their interests, Cohort 8 will be pursuing three major projects over the next eight months:

- Establishing Psychological Safety in Remote, Distributed, and Hybrid Teams
- Leading in the Face of Uncertainty
- Informing Judgment with Safe-to-Fail Probes

The learning journey for Cohort 9 began with a kick-off workshop in June. The number of applicants nearly doubled this year to 40 with Chapter leaders nominating 22, CAB leaders nominating 15, and other INCOSE leaders nominating 3. After a heart-searching review, the TLI accepted 25 applicants (14 women and 11 men) bringing the total number in the TLI to 143. Best of all, our global reach and diversity continue to expand.

Whilst this article has focused on technical progress, leadership is fundamentally about people leading people, so we are proud to conclude with a photo montage of Cohort 9 and invite you to reach out to them wherever you can.

By Patrick Godfrey, TLI Coach,
patrick.godfrey@incose.net





Welcome to the TLI Cohort 9



Will Barnum
MITRE



Garima Bhatia
Ford



Brenda Cockson
Peraton



Julia Eng
Aerospace Corporation



Terry Fitzgerald
ALSTOM



Julianne Foster
Ball Aerospace



Jennifer Giang
Colorado State
University



Alberto Gonzalez
Fernandez
ESA



Natalia Gustafson
Ball Aerospace



Daniel Hayden
SKA Telescope



Evelyn Honore-Livermore
Kongsberg Defence and
Aerospace



Bonnie Johnson
Naval Postgraduate
School



Nathan King
Aurecon



Stephanie Lord
Cummins



Thomas Manley
Decision Analysis
Services



Hanish Mehta
Wabtec



Robin Mikola
System Strategy, Inc.



Yukimi Mizuno
Keio University



Amy Moy
Sandia National Labs



Dean Norfleet
General Motors



Victoria Patterson
Northrop Grumman



Sharad Rayguru
TBD



Tyler Thomas
Ball Aerospace

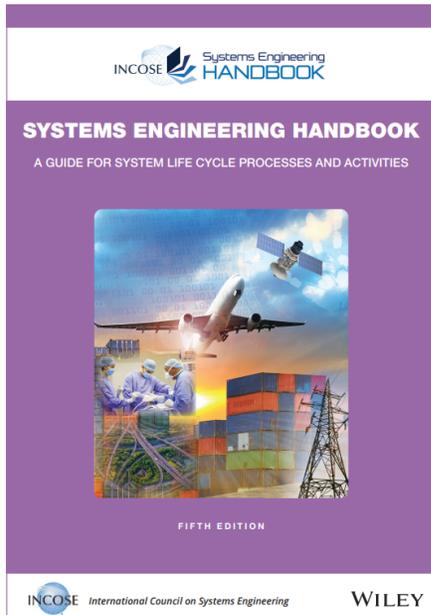


Julie Tomlinson
Peraton



Raul Zamorano
Airbus

INCOSE Systems Engineering Handbook Update



The International Council on Systems Engineering (INCOSE) initiated an update of its Systems Engineering Handbook (SEH) in 2019. The INCOSE SEH is a comprehensive guidebook that provides valuable information and guidance on the principles and practices of systems engineering.

It serves as a reference for systems engineering practitioners, educators, and students and serves as the basis for the systems engineering certification knowledge exam. It offers a standardized approach and a common language for understanding and implementing systems engineering concepts throughout the life cycle of a system and is valid for any industry or application domain, tailored as appropriate. The handbook emphasizes the importance of systems thinking and taking a holistic, balanced, life cycle approach to engineering systems.

Since the INCOSE SEH reflects the state-of-the-good-practice of systems engineering, it generally is updated every 5-8 years to incorporate: changes in systems engineering due to improved principles, processes, methods, and tools (add,

remove, and refresh topics); updated versions of systems engineering standards (e.g., ISO/IEC/IEEE 15288); and the updated vision and new challenges in systems engineering. The previous Fourth Edition (4E) was published in 2015. The Systems Engineering Handbook Fifth Edition (SEH5E) will be published in July 2023 in conjunction with the INCOSE International Symposium (IS23).

A Team Effort

INCOSE selected an SEH5E editorial team attempting to reflect the diversity of the organization. Seven editors were selected to represent the three INCOSE sectors (Americas, EMEA and Asia-Oceania). The main objective was to form an effective editorial team with the following key strengths to ensure the handbook's quality and effectiveness: deep understanding of systems engineering principles, concepts, and best practices; current with the latest developments in the field; excellent writing and editing skills; effective collaboration and communication skills; meticulous in reviewing and fact-checking the content; open to incorporating new ideas, addressing revisions, and adjusting the content; and able to manage deadlines.

The SEH5E editorial team decided to follow an appropriately tailored systems engineering process to develop the SEH5E. As with any application of the systems engineering process, it was an iterative in nature. In addition, a schedule was established with the following major stages:

- Strategic Planning & Gather Inputs
- Finalize Requirements and Architecture & Design
- Initial Inputs & Prototype Build
- Prototype V&V, TechOps Reviews, Chapter Reviews, and IPC Review
- Comment Disposition
- Updated Inputs
- Final Edit, Review, Updates, & Approval
- Published Through Wiley
- Release of SEH5E at INCOSE IS23

PRODUCTS & PUBLICATIONS

The handbook update engaged a wide set of stakeholders. Over 700 User Needs were captured through various tools (user comments, surveys, International Workshop input sessions, etc.) resulting in SEH Stakeholder Requirements, SEH Handbook Requirements and SEH Author Requirements. These requirements were distributed to more than 100 INCOSE Working Group and Subject Matter Expert authors, who generated content for a first draft content. This first draft was reviewed by more than 250 reviewers who generated more than 1200 comments. After disposition of the comments by the editors, the authors were then engaged again to address these comments (as applicable) and update the draft. The final review, updates, and approvals were also done in an iterative manner. To implement feedback, the editorial team worked hand-in-hand with all of the authors and with the publisher, Wiley. This required great effort, commitment, and dedication on the part of all the contributors, whatever their role.

Capturing inputs from stakeholders has been essential for updating the SEH because it incorporates diverse perspectives, addresses industry needs, facilitates knowledge sharing, promotes consensus building, and supports continuous improvement. By involving stakeholders, the handbook becomes a collaborative and INCOSE community-driven resource that effectively serves the systems engineering community worldwide.

Major Changes for the SEH5E

Updating the SEH has been important to ensure the relevance, effectiveness, and widespread adoption of systems engineering practices. The following are the most relevant changes that have been incorporated into the SEH5E:

- Significantly restructured the handbook due to the changes and new topics, the SEH5E now has six parts (previously, the 4E had ten chapters)



TEACHING SYSTEMS ENGINEERING WITH CATIA

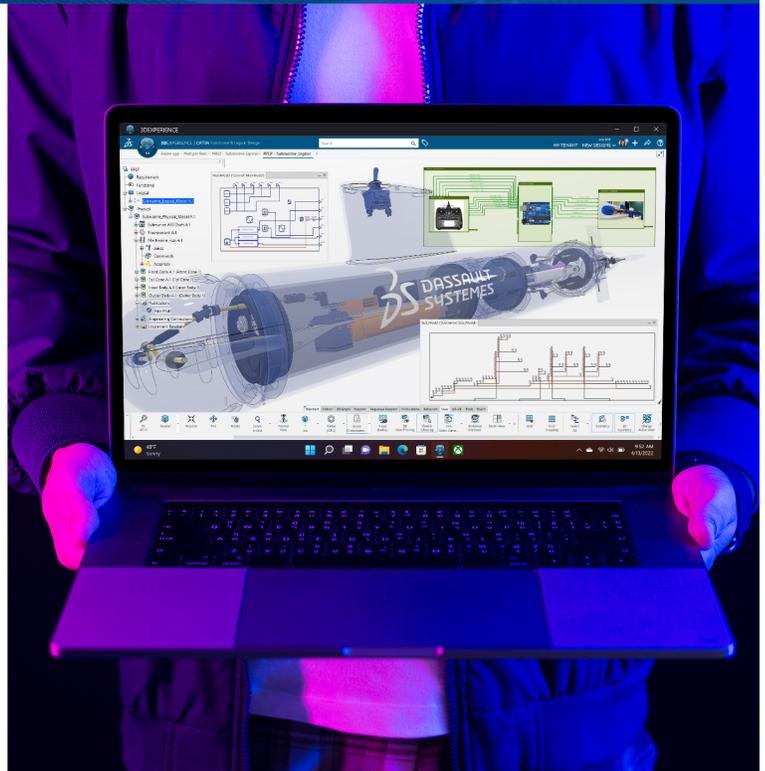
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PRODUCTS & PUBLICATIONS

- Moved to single-column format for improved readability/accessibility
- Provided more focus on foundational concepts, to provide reader with overview perspectives
- Updated to reflect the latest version of ISO/IEC/IEEE 15288:2023 - kept alignment with the 15288 processes, reordered them to be consistent with the 15288 order
- Updated the IPO diagrams to be more “model and information centric”
- Added new topics such as Uncertainty, Cognitive Bias, Brownfield, COTS, IoT/Big Data, Cyber-Physical Systems (CPS), Natural Systems, Digital Engineering, etc. based on stakeholder inputs
- Elaborated more on the practices of SE in terms of competencies/soft skills and relationship to other domains
- Engaged a graphic designer for key “impactful” figures
- Added additional domain-specific applications and support for future domain annexes

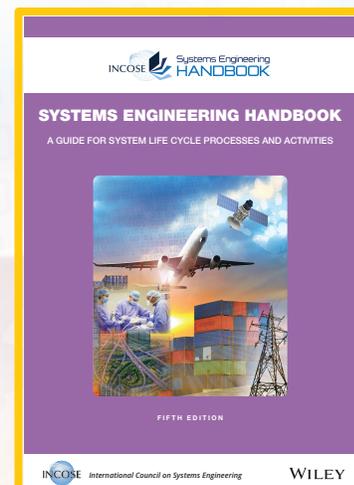
Conclusion

The updated SEH5E represents a comprehensive and up-to-date resource that reflects the latest systems engineering best practices, methodologies, and tools. It incorporates diverse perspectives from stakeholders, ensuring its relevance and applicability across different domains and industries. The collaborative development process fostered consensus, knowledge sharing, and a sense of ownership within the INCOSE community.

The iterative development process has facilitated continuous improvement, ensuring that the SEH remains a dynamic and evolving resource. Overall, the updated SEH5E serves as a vital reference guide, supporting education, professional development, and successful system engineering endeavors worldwide.

By Bernardo A. Delicado, ESEP – Editor, EMEA Sector & David D. Walden, ESEP – Editor-in-Chief, Americas Sector

The INCOSE Handbook 5th Edition will be published in July 2023.



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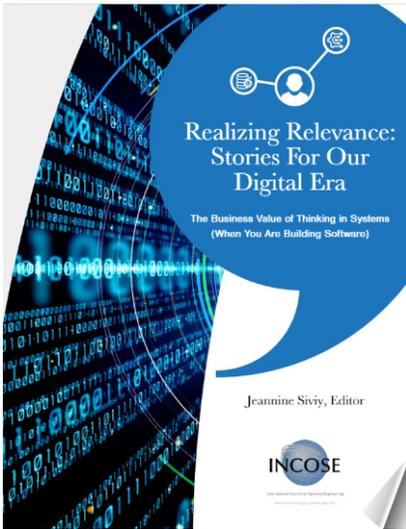
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 **Handbook Webpage**

New eBook Offers Systems Engineering Solutions



intent is to reach the audience with what they really care about.”

The eBook is free and interactive with built-in worksheets for feedback and taking action.

Sivy said, “What we are hoping is that we will see people who are leading software initiatives – the decision-makers -- taking that pause early on to say, ‘This is a systems problem. I need a different kind of expertise on my team, and I’m willing to go get it.’”

To learn more about “Realizing Relevance: Stories for Our Digital Era” eBook, visit the website.

By Beth E. Concepción

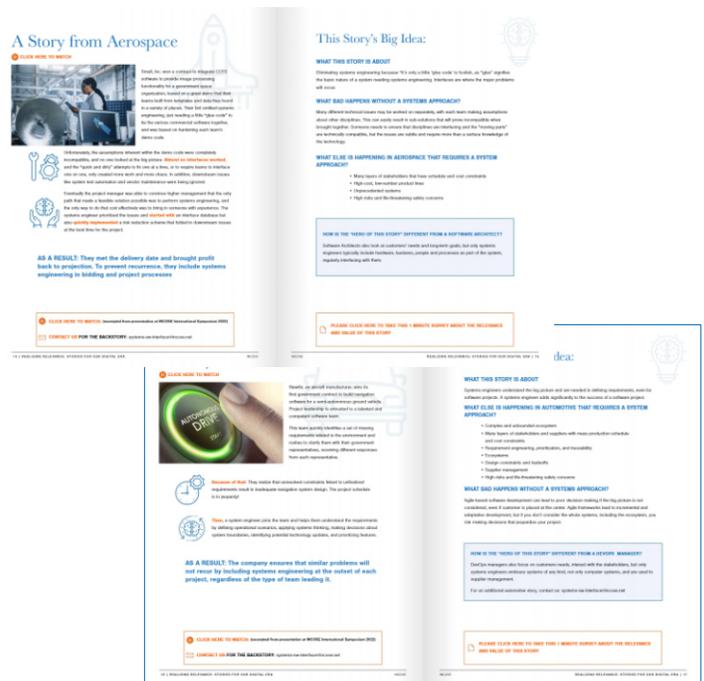
“Realizing Relevance: Stories for Our Digital Era: The Business Value of Thinking in Systems” — a new INCOSE eBook — should make life easier for digital transformation executives hoping to find solutions for problems they encounter.

“We wrote it for people in business and software settings,” said Jeannine Sivy, chair of the INCOSE Systems and Software Interfaces Working Group, the group that created the eBook.

“A lot of times, software doesn’t work as intended or as desired,” she said. “Business value suffers and people in executive roles get really frustrated.”

This interactive eBook links to video clips where the authors tell the real-life stories of how they used systems engineering and thinking in healthcare, eCommerce, startups, aerospace, and automotive to resolve problems at the point where things went wrong and implement lasting solutions. The eBook illustrates how a systems approach provides significant business advantage, ultimately increasing value while saving time and money.

“We kept our stories really short: Here’s the business situation. Here’s the challenge. Here’s how systems engineering helped the bottom line,” Sivy said. “The



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Editor's Choice



Systems Engineering Journal Volume 26, Issue 3

Read it here:
<https://bit.ly/3abMeYW>

Identifying key parameters impacting cost in large-scale complex space programs using simulation-based global sensitivity analysis

Nazareen Sikkandar Basha, Leifur Leifsson, Christina L. Bloebaum

This paper analyzes cost overruns in geosynchronous communication satellite programs using model-based global sensitivity analysis. Key parameters impacting program costs are identified, highlighting the significance of system-based requirements. The study emphasizes the need to quantify parameter impacts for reducing cost overruns in complex systems.

Other Papers in this Issue:

- Minding the gap between the front and back offices: A systemic analysis of the offshore oil and gas upstream supply chain for framing digital transformation
- Improving consistency of AADL models: A composition approach

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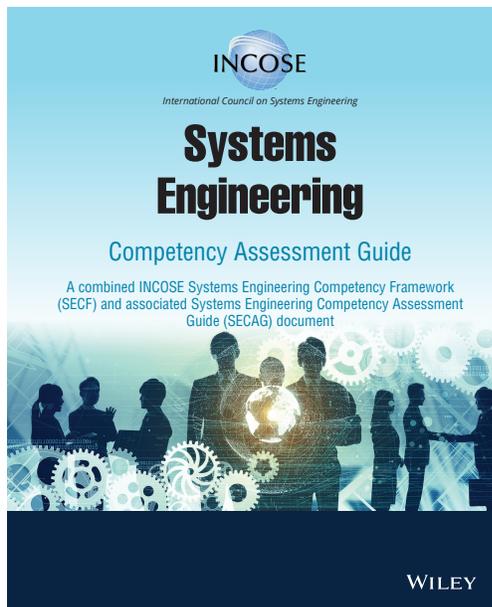
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By Ken Zemrowski, Ken.Zemrowski@incose.net, Associate Director for Publications

Latest Products

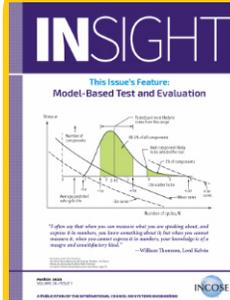
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A compilation of 37 competencies needed for systems engineering, with information for individuals and organizations on how to identify and assess competence.

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INSIGHT Volume 26, Issue 1

Read it here:

www.incose.org/insight

Model-Based Test and Evaluation

A follow-up to the March 2017 INSIGHT that was published in collaboration with the March 2017 issue of the International Test and Evaluation Association (ITEA) Journal on the common theme of the engagement of systems engineering with test and evaluation.



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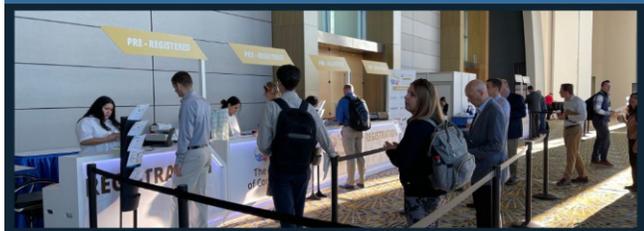
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hybrid event
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Eight Aspects of Agile Systems Engineering
(Workshop Format)

Abstract 2
Systems Engineering Workforce Readiness for the Future
(Special Interest Panel)

21 - 24 August 2023, Adelaide, Australia
Find out more at www.sesa.org.au/event/asc2023/

 incose.org/events

The INCOSE Code of Ethics

This Code is concerned with how certain fundamental imperatives apply to one's conduct as an engineering professional. These imperatives are expressed in a general form to emphasize that principles which apply to engineering ethics are derived from more general ethical principles.

It is understood that some words and phrases in a code of ethics are subject to varying interpretations, and that any ethical principle may conflict with other ethical principles in specific situations. Questions related to ethical conflicts can best be answered by thoughtful consideration of fundamental principles, rather than reliance on detailed regulations.

Preamble

Engineering is a profession that requires its practitioners to be well educated and knowledgeable. Systems Engineering, in particular, is a unique discipline in that 1) it is highly integrative, spanning elements of many activities, 2) often provides representation of stakeholders' interests other than employer or client, and 3) operates in largely international arenas where value systems, beliefs and customs vary widely. The practice of Systems Engineering can result in significant social and environmental benefits, but only if unintended and undesired effects are considered and mitigated.

Fundamental Principles

Systems Engineers uphold and advance the integrity, honor and dignity of the engineering profession by:

- Being honest and impartial;
- Maintaining the highest levels of integrity and keeping abreast of the knowledge of their disciplines;
- Striving to increase the competence and prestige of the engineering profession; and

- Supporting the educational institutions, the professional societies and technical societies of their disciplines.

Fundamental Duties to Society and Public Infrastructure

- Guard the public interest and protect the environment, safety and welfare of those affected by engineering activities and technological artifacts.
- Accept responsibility for your actions and engineering results, including being open to ethical scrutiny and assessment.
- Proactively mitigate unsafe practice.
- Manage risk using knowledge granted by a whole system viewpoint and understanding of systemic interfaces.
- Promote the understanding, implementation, and acceptance of prudent Systems Engineering measures.

Rules of Practice

- Act legally, honorably, honestly, justly, and responsibly.
- Respect, protect, and preserve the intellectual properties of others.
- Honor all legal contracts and agreements.
- Treat all constituents fairly.
- Give prudent advice. Be truthful, objective, and maintain your professional and technical integrity.
- Provide diligent and competent services to the best of your ability.
- Respect the trust and the privileges granted to you.
- Avoid conflicts of interest and the appearance thereof.



[Code of Ethics Webpage](#)



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- Q3 2023 Newsletter: August 15, 2023
- Q4 2023 Newsletter: November 15, 2023
- Q1 2024 Newsletter: February 15, 2024

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Who are we? INCOSE is a 21,000+ 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.

All views expressed in this Newsletter are the writers' own and do not reflect the views of INCOSE.

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