



Q3 2023

MEMBERS NEWSLETTER

The International Council on Systems Engineering

In this issue:

- Global Chapter Updates
- Smart Cities Initiative Launch
- INCOSE SE Handbook:
Exclusive Announcement
- SySTEAM Conference
Summary
- And much more

A Better World Through a Systems Approach

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2024
Annual **INCOSE**
international workshop
HYBRID EVENT
Torrance, CA, USA
January 27 - 30, 2024

Mark your calendar for #INCOSEIW... the event with a difference!

INCOSE's International Workshop is the **event of the year for systems engineers** to contribute to the **state of the art**. Unlike INCOSE's annual International Symposium and other conferences, there are no paper, panel or tutorial presentations.

Instead, attendees spend 4 days working alongside fellow systems engineers who are there to make a difference. **Systems Engineers at all levels and from all backgrounds** are encouraged to **engage in working sessions**, and contribute their knowledge and experience to take the discipline forward.

Join us to **build networks, perform activities, and produce outcomes** beyond your typical network and focus area.

Dates

Saturday 27 January –
Tuesday 30 January, 2024

The Venue

Torrance Marriott Redondo Beach
3635 Fashion Way
Torrance, California 90503 - USA



What the INCOSE International Workshop is about... in the words of our previous attendees!



«It's not a conference!»

«Joining makes us
stronger as a discipline»

«Being competitive about
ideas, not products»

«Networking with
people you can rely on»

«You feel part of a team,
shaping the future»

«An opportunity to talk
to leaders in the field»

«So much energy, and
a buzz in the rooms!»

«Everyone has a voice
at this workshop!»

«Making the world
a better place»

«Pushing the boundaries
of knowledge»

Stay tuned for more!
www.incose.org/IW2024
#INCOSEIW - Join the conversation



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Editor's Letter



Hello Valued INCOSE Members!

The power of systems engineering shines through in this month's Q3 Members Newsletter. Thank you to all of our members and volunteers for your support and contribution to

INCOSE—your professional society for systems engineers. INCOSE is hard at work around the globe developing resources and content for you to stay connected and up to date on the resources, technology, and trends you need to stay at the top of your field.

Dive into this vibrant issue, where we have curated content designed to spark conversations and elevate our community's engagement. Starting off with a moment of gratitude to the INCOSE events team, led by Donna Long, for the hard work and dedication to producing the IS2023 in Hawaii where INCOSE reached record-breaking attendance from around the globe—both in person and virtually. Thank you all for your hard work and dedication to INCOSE.

Sadly, shortly thereafter, our hearts mourned for the people of Maui. We have dedicated a special feature, "A Message to Maui," where we extend our heartfelt sympathies to those affected by the recent fires, and we invite you to contribute to their efforts to restore their community.

In other news, INCOSE continues to grow and change as you will read in our the INCOSE

spotlight section about as the Academic Matters group restructures and charts a new course with compelling objectives under the able leadership of Alejandro Salado.

Of interest to all systems engineers, Calling All Systems, our new virtual online seminar, brings thought leaders together to discuss today's trends and the future of systems engineering. Catch up on the vibrant discussions held in the Calling All Systems panel series – truly a tour-de-force in Systems Engineering knowledge sharing!

Join us in applauding Anabel Fraga for her prestigious award from the Society of Women Engineers (SWE). Don't miss out on the important news from our Asia Oceania and EMEA sectors as they present exciting updates including a dive into the achievements of the Associazione Italiana di Systems Engineering (AISE)! Bravo! We continue to celebrate with the INCOSE Chesapeake Chapter for their consistent accolades along with our Foundation which is working hard provide membership access around the globe. Get a glimpse into the stellar work of the INCOSE Foundation to build a more equitable future.

Also, get ready for the SE Handbook's v. 5 translations!

Find out more in this issue of your membership newsletter. We continue to forge meaningful collaborations with our Corporate Advisory Board and acknowledge their contributions to the industry and field of systems engineering. Check out the great work coming from INCOSE IT along with the

new INCOSE Systems Engineering Laboratory (SE LAB) that offers a glimpse into the technological advancements shaping our profession.

We have dedicated a section of the newsletter to DEI. Our advocates for diversity will appreciate the deep dive into Diversity, Equity, and Inclusion, reinforcing our commitment to an inclusive community.

Be sure to catch up on Chapter Updates and get acquainted with the INCOSE Foundation and their global initiative to make a difference for aspiring systems engineers. Discover invaluable insights from our Requirements Working Group, who are keeping up with current standards and practices in this vital area.

Exploring the urban landscape? Don't miss Smart Cities article. For those leaning into interdisciplinary studies, SySTEAM is right up your alley, and keep an eye out for the Products section and our round-up of the latest products.

Lastly, join us in remembering the impactful legacy of Prof. Dr. Eduard Igenberg in our "In Memoriam" section where we pay tribute to a systems engineer who made a huge contribution to the profession of systems engineering.

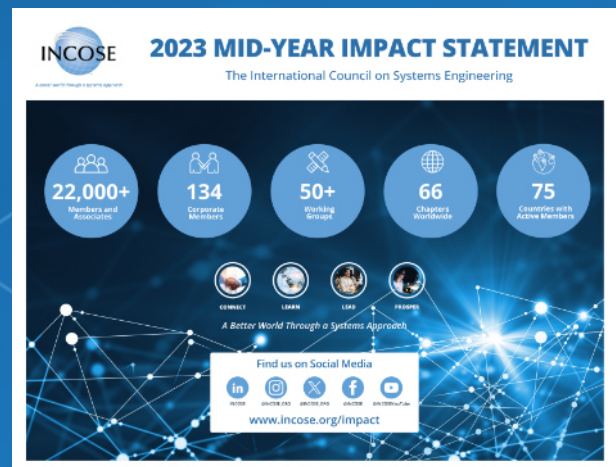
Every article in this edition amplifies the essence of INCOSE's commitment to advancing the systems engineering field. Happy reading, and let's keep pushing boundaries to make a better world through systems approach!

Warm Regards,

Honor Allison Lind, Director of Marketing and Communication
Editor-in-Chief, INCOSE Members Newsletter
honor.lind@incose.net

Out Now

2023 Mid-Year Impact Statement



Every year, INCOSE makes incredible impacts in the discipline of systems engineering. Our 33rd year is no exception.

We invite you to download, review and share the 2023 Mid-Year Impact Statement as we recap the first half of 2023 and look ahead to the concluding half.

www.incose.org/impact

A Message from INCOSE President, Marilee Wheaton

Esteemed colleagues,



I just returned from Honolulu for the second visit this year. I was pleased to serve on a SMCS/ INCOSE Future of Systems Engineering (FuSE) panel along with Bill Miller, INCOSE FuSE lead, and IEEE SMCS leaders.

INCOSE was invited to participate by the IEEE Systems, Man and Cybernetics Society (SMCS) as part of their annual conference. INCOSE has an MOU with SMCS for joint society collaboration as part of our Outreach initiatives. Being in Honolulu was bittersweet, with wonderful memories of our record-breaking International Symposium (IS) held in July, and our continuing heartbreak and sympathy for the devastation and recovery in Maui.

Thanks to our Nominations & Elections committee for an outstanding slate of INCOSE members who stood for elections, and sincere congratulations to our newly elected members to the INCOSE Board of Directors (BoD) - Mike Watson, Alice Squires, Bernardo Delicado, and Quoc Do. They will be installed during the Opening Plenary at the January International Workshop (IW), and join a dedicated group of volunteer leaders on the INCOSE BoD. We look forward to their continuing leadership and contributions to INCOSE. Start making your plans to join us at the IW and congratulate your colleagues in person!

I am looking ahead to the Society of Women Engineers annual conference (WE23) being held later this month in my backyard at the Los Angeles

Convention Center. As part of our Outreach and Diversity, Equity and Inclusion (DEI) initiatives, INCOSE and EWLSE are again sponsoring an exhibit booth at WE23, which is the world's largest conference for women in engineering and technology. Alice Squires and myself are honored to have been accepted to present at a session on "Leading in an Evolving World". I am especially excited to see one of our very own INCOSE leaders, Anabel Fraga, receive the prestigious SWE Distinguished Engineering Educator Award at the conference.

Every year, INCOSE makes incredible impacts in the discipline of systems engineering. Our 33rd year is no exception. We invite you to download, review and share the [2023 Mid-Year Impact Statement](#) in your organizations. As always, our INCOSE chapters across the globe are advancing systems engineering in their communities and contributing to our vision of a better world through a systems approach. This issue of our newsletter provides exemplary evidence of their value added accomplishments and activities. We can all obtain inspiration and ideas from these newsletter articles. Happy reading!

With warm regards to all,
Marilee

Marilee Wheaton
INCOSE President
marilee.wheaton@incose.net

INCOSE Election Results

The Nominations & Election Committee (N&E) would like to thank all those who stood for the election. We are pleased to announce the results of the 2023 INCOSE election. These individuals will join the INCOSE Board of Directors on Saturday, 27 January 2024, when they are installed during the opening plenary of the 2024 International Workshop.



Mike Watson

INCOSE President-Elect

(President-Elect 2 years / President 2 years)



Alice Squires

INCOSE Treasurer

(2 years)



Bernardo Delicado

INCOSE Director for Outreach

(3 years)



Quoc Do

INCOSE Director for Asia Oceania

(3 years)



Need an Edge in Systems Engineering? We Have the Science for That.

Empower your team with the essential skills in systems engineering and digital methods to excel in today's competitive landscape. With a strong foundation in SE/MBSE taught by industry-leading experts, your team will be well-equipped to elevate performance and enable data-driven organizational transformation. Custom client programs and public courses available. Explore your options today.

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A Message From the Executive Director, Steve Records



The end of Q3 marks a small milestone for me. I have been with INCOSE for 6 months.

In that time, I have had the opportunity to learn much about the organization, but more importantly I have had the opportunity to attend the International Symposium, the EMEA WSEC, the Western States Regional Conference as well as meet chapter leaders from the Crossroads of America, INCOSE UK, SESA, GfSE, and AFIS. Those travels have shown me the most important asset of INCOSE - the people.

While there are numerous things we have already done or started in these 6 months - a global member survey, formed a strategic planning committee and embarked on a new plan for the future, formed a task force to review the governance structure and Board operations, and started hiring a full time INCOSE staff (a new Director of IT starts in October!), it is the people that stand out. There are many things that could potentially separate us - the industry in which we work, where we live, the sizes of our companies, and even the languages we speak - what I have

learned is that there is far more that unite us than separate us.

It is this culture that we will better define and utilize to add value to each of you, your companies, and the SE discipline. It is the culture that will enable us to grow and have a greater impact in the world. While there is more that unites us than divides us, organizationally, we don't yet act as ONE INCOSE, but the idea of ONE INCOSE - leveraging the shared resources across INCOSE rather than duplicating them, creating access for all products equally regardless of chapter affiliation or language, and accelerating adoption and consistency of services rather than recreate wheels and processes - is what will unleash the innovation and value within our network.

For those of you that I have had the pleasure of meeting so far, thank you for the experience and engagement. To those of you I have yet to meet, I look forward to the opportunity. Perhaps most importantly, thank you all for being members of INCOSE!

Steve Records
INCOSE Executive Director

INCOSE Member Survey

Thank you to everyone who took part in the INCOSE Member Survey. The results are currently being collated and will be published in the Q4 2023 issue of the Members Newsletter in December 2024.

A Message to Maui

To our cherished community and friends,

We at INCOSE are deeply saddened and profoundly sorry to witness the devastating fires that recently ravaged the beautiful island of Maui and extended their havoc to other Hawaiian islands. The images and stories emerging from the aftermath are truly heart-wrenching.

Having just held our recent conference in Oahu, we were fortunate to experience the breathtaking beauty, rich culture, and the warm spirit of aloha that defines Hawaii and its people. The relationships we fostered and the memories we created have made this tragedy resonate even more deeply within our hearts.

In the face of this adversity, we want to stand shoulder-to-shoulder with the people of Hawaii. As an organization, we are making a contribution to the relief efforts underway to aid those affected

by the fires at www.hawaiipeoplesfund.org. But the strength of our community lies in its unity and compassion. Therefore, we invite and encourage all our members to extend their support in any way they can, whether it be through monetary donations, essential supplies, or volunteering.

Hawaii has always embodied resilience and the spirit of 'ohana (family). Let us come together as a global 'ohana and offer our assistance during these trying times.

Mahalo nui loa for your compassion and support.

‘o ko‘u pu‘uwai kāu

Warm regards,
INCOSE
International Council on Systems Engineering





33rd Annual **INCOSE**
international symposium

HYBRID EVENT

Honolulu, HI, USA
July 15 - 20, 2023

Mahalo to our 1,030 attendees!
You were 759 in Hawaii and 271 online



Sincere **thanks to all** who made #INCOSEIS 2023 such a huge success:
the enthusiastic **participants, great speakers, and generous partners.**

Key facts & figures

- 450+ first-time attendees
- 25 countries represented
- 6 days, 6 tracks
- Diverse program
- 25 application domains
- 83 sessions
- 180+ presentations
- 3 keynote speakers
- Fantastic networking
- Dedicated virtual track
- User-friendly platform
- 4-week post-event access

Key topics included:

- SE Fundamentals
- Sustainability
- Academic
- FuSE – Future of Systems Engineering
- MBSE – Model-based Systems Engineering

A special mention to our fabulous **3 Keynotes**
for their inspirational talks!



Matthew Kamakani Lynch
The University of Hawai'i System

Former Director of Sustainability Initiatives

Speaking topic
Cultivating Emergence for Transformative Change



Sir Julian Young

Past-President of the Institution of Engineering and Technology (IET)
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
Visualizing Complex Systems: The Power of Data and AI

www.incose.org/symp2023 -
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Restructured Academic Matters Team Works Toward Major Goals



Academic Matters Director Alejandro Salado and the Academic Matters team have big goals for the future, including increasing and nurturing the engagement of those in higher education within INCOSE.

Alejandro, who has been in the leadership position since January 2023, said the team has four main goals:

1. Elicit and capture the wisdom that INCOSE practitioners possess for academic institutions to use.
2. Increase the engagement of faculty with INCOSE to help in increasing the breadth, currency, and rigor to INCOSE technical products.
3. Make INCOSE valuable for students with a clear path to transition into regular members.
4. Reach regions beyond North America.

Salado himself operates from within the system as he is Associate Professor of Systems Engineering at University of Arizona.

"I am passionate about systems engineering, and I believe that the benefits for both INCOSE and academia of engaging academics in INCOSE have not been fully realized yet," Salado said. "INCOSE is my professional 'home' and I wish it to become so for all my colleagues in higher education and for students interested in systems engineering."

Salado, who has a Ph.D. in systems engineering from the Stevens Institute of Technology, said the Academic Matters team recently reorganized to better reach goals. New team leaders include:

Bryan Mesmer, Ph.D., Assistant Director, Faculty Matters, is responsible for identifying, initiating, and executing short-term, high-energy projects that serve faculty at all levels in higher education.

Paul Wach, Ph.D., Assistant Director, Student Matters, is responsible for identifying, initiating, and executing short-term, high-energy projects that serve students at all levels in higher education.

Logan Grumbach, Ph.D., Assistant Director, Synergistic Relations between Academia and Practice, is responsible for identifying, initiating, and executing short-term, high-energy projects that foster cross-fertilization between research and practice.



Bob Bordley, Ph.D., Assistant Director, Special Projects and Liaisons, is responsible for managing and aligning mid- and large-sized projects related to and/or housed within Academic Matters as well as connecting with external education-related societies.

Each of the new leaders within Academic Matters has a two-year term, while Salado's term is three years.

By Beth E. Concepción



Welcome to the New and Renewing Corporate Advisory Board (CAB) Members



Corporate Advisory Board membership allows organizations to guide the direction of the SE discipline

- Members and Associates gain access to state-of-the-art products.
- Align with peers and fellow industry leaders, grow your global footprint, and learn about how other industry leaders are applying systems engineering to solve business problems.
- Gain better access to talent - find and hire competent, certified Systems Engineers through your INCOSE connection

JOIN THE CAB TODAY



34th Annual **INCOSE**
international symposium

hybrid event

Dublin, Ireland
July 2 - 6, 2024

Save the date for the next
#INCOSEIS experience!

Tuesday, July 2
Saturday, July 6
2024

The Convention Center Dublin
Spencer Dock, N Wall Quay
Dublin, Ireland
www.theccd.ie

Start preparing your

papers, panels, tutorials and presentations.

Submission deadline: November 30, 2023



Papers



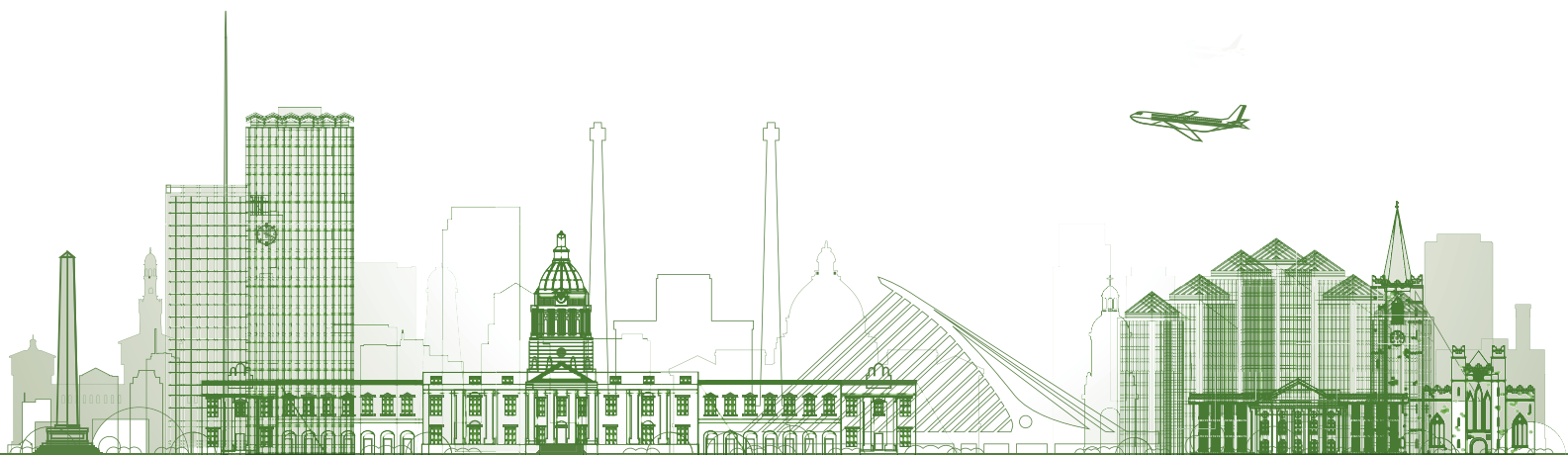
Panels/
Roundtables



Tutorials



Paperless
Presentations



More details coming soon!

www.incose.org/symp2024

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Calling All Systems



March 2023 saw the launch of Calling All Systems, sponsored by Dassault Systèmes; a series of panel discussions hosted by INCOSE.

This exciting new initiative aims to bring together thought leaders from around the globe for insightful panel discussions on systems engineering. Calling All Systems provides a platform for experts to explore the intricacies of Systems Engineering and share their expertise in a virtual panel format.

The inaugural sessions have already made an impact. The first two panel discussions delved into the topics of Model-Based Systems Engineering (MBSE), sponsored by Siemens and Product Line Engineering (PLE), sponsored by BigLever. These sessions garnered substantial interest, with more than 700 participants from thirty different countries. The strong attendance at these sessions reflects a growing global interest in Systems Engineering.

After a short break for the Summer, Calling All Systems is back for the Fall Series. The first session, of the series took place September 19, with a focus on sustainability, sponsored by IBM.

Taking part in this panel were; Jeff Mikulina (Hawai'i Climate Coalition), Gerhard Krinner (CNRS), Jennifer Russell, EISE, CSEP (Garver's Water), Sky Matthews (IBM), and Matthew Kamakani Lynch (The University of Hawai'i System). The session was chaired by David Long ESEP, Director for Strategic Integration.

A recording of this session is now available to watch [here](#). The upcoming sessions in the Fall Series are:



October 18: Models in Space - From Theory to Practice: Applying Modeling to Space Ventures with Dassault Systèmes



November 17: FuSE - Navigating Tomorrow's Challenges: Building the Future of Systems Engineering with Spec Innovations

Series Sponsor  DASSAULT SYSTEMES



 [Calling All Systems Webpage](#)

Sustainability

Session sponsor 



Jeff Mikulina
Hawai'i Climate Coalition



Gerhard Krinner
CNRS



Jennifer Russell,
EISE, CSEP
Garver's Water



Sky Matthews
IBM



Matthew Kamakani Lynch
The University of Hawai'i System

 [Watch the replay](#)



EWLSE During IS2023

IS2023 is the premier event in INCOSE. This year there were several EWLSE and DEI sessions. One of the key highlights of the EWLSE events at IS2023 was the invited content, a panel discussion on Space Workforce 2030: Advancing Diversity, Equity and Inclusion (DEI) which was moderated by Marilee Wheaton (The Aerospace Corporation). The panel comprised of Michael Hollis, Jr. (Stellar Solutions), Lt. Gen. Larry D. James (USAF (Ret.)), Prof. Lydia Kaiser (Technische Universitat Berlin), Rosalind Lewis (The Aerospace Corporation)

The Diversity track was chaired by Cecilia Haskins and included three presentations.

Presentation#31: 4.3.1 / A Discussion of Engineering Archetypes and What They Mean to You Devon Clark (INCOSE); Devon Clark (Deloitte Consulting). Devon built on the opening keynotes with their focus on collaboration as systems engineering recognizes its responsibility as a discipline to address both technological and cultural issues. She and other Deloitte speakers recognized the importance of using concepts of technical debt to drive out risk and maximize opportunities. The value of her message was enhanced by many shared experiences.

Paper#201: 4.3.2 / Proposing a DEI Strategy for INCOSE Based on the Diversity and Inclusion Progression Framework 2.0 Alice Squires (International Council on Systems Engineering); Alan Harding (BAE Systems)

This presentation was based on the Autumn 2019 INSIGHT article by the authors and offered explicit definitions for the terms of the acronym DEI.



Diversity is perceived through observable attributes of individuals such as age, nationality, and educational background. The variety of experiences of each member defines our state of equity. The degree to which an individual feels that they belong to a group defines the range of inclusion. INCOSE Systems Engineering Handbook section 5.2 offers additional information on this topic.

Paper#43: 4.3.3 / A Social Enterprise Approach for Parenting in the Japanese Society Raquel Hoffmann (Keio University); Ana Maria Bori (Soka University)

The title of this paper equated Society to an Enterprise and recognized the paradox of cultural norms that in themselves may be considered 'good' but not when applied to parenting with its multitude of unique realities. Raquel very competently used UAF modelling to walk us through the complex relationships and necessary social transformation and demonstrated this approach as a way to communicate with policy-makers.

EWLSE and DEI also hosted the evening reception during IS2023. The reception was very well received and attended by more than 40 members. It was an evening of networking and supporting the efforts towards diversity and inclusion in any environment we come across. During the reception, each person shared how they were unique from everyone else in the room which sparked a great connect with all present there. Important announcements were made about

upcoming events, proposed book authoring, mentoring initiative. The group also celebrated the achievements of EWLSE in all three sectors of INCOSE. If you would like to part of the group, you can write to ewlse-leaders@incose.net.

News about EWLSE members

Society of Women Engineers (SWE) announced the recipients of its annual awards program to recognize who are making significant contributions to the STEM community and the advancement of women in engineering.

One of our very own, Anabel Fraga, is receiving an award - Distinguished Engineering Educator Award. Anabel will be receiving the award at SWE's flagship event, WE23, which will be held October 26-28, 2023 in Los Angeles, California, USA. More details about the event are available [at this site](#). This award recognizes an individual who identifies

STEVENS

INSTITUTE OF TECHNOLOGY

The School of Systems and Enterprises (SSE) at Stevens Institute of Technology is seeking a pool of qualified adjuncts for a range of part-time teaching assignments in the areas of software engineering, systems analytics, industrial and systems engineering and engineering management, with openings beginning in Spring 2023. Successful candidates will contribute to a dynamic and growing school that provides students with a research-centered interdisciplinary and transdisciplinary education embedded in systems thinking and design. Candidates will be evaluated on their teaching credentials and potential for delivering high-quality instruction to undergraduate, masters and doctoral students.

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.

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 are offered in a virtual format that is both live and recorded with flexible scheduling based on corporate partners' needs and preferences.

Qualifications: Applicants must possess a masters or doctoral degree in a related engineering or science discipline and evidence of rich industry

School of Systems and Enterprises SEEKING ADJUNCT FACULTY



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.

Candidates with extensive academic or industry experience in system/software architecture, software development management, cyber security and testing, and cloud computing. Available courses include Fundamentals of Software Engineering, Object-Oriented Software (Java), Software Requirements Analysis and Engineering, Software Testing, Quality Assurance and Maintenance, Software Architecture & Component-Based Design, Principles and Practices of DevOps, Software Cost Estimation and Metrics, and Agile Methods for Software Development.

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.muworkdayjobs.com/External?q=sse>.

as a woman, who has made significant contributions in STEM and have instructional experiences in an engineering, engineering technology, or science related to engineering educational institute.

Let's congratulate and celebrate Anabel's achievements. More details about the award available [at this site](#).

Alice Squires and Marilee Wheaton's Listen and Learn session on "Leading in an Evolving World" was accepted at SWE's conference. This is the world's largest conference for women in engineering and technology. The event features panel discussions on emerging trends, data, and best practices led by top experts, content creators, and innovators. Dedicated sessions are tailored for early-career professionals and aspiring leaders to nurture growth, networking, and career development. Alice and Marilee's session is 30 minutes of talk, followed by 15 minutes of Q&A. The talk is also recorded for the virtual attendees.

Upcoming Events

INCOSE's flagship event in Asia Oceania, AOSEC 2023, will be hosted by INCOSE India Chapter. The event has a panel discussion and a leadership workshop led and sponsored by Stueti Gupta, Asia Oceania EWLSE Lead. The panel discussion will be held during the main conference days and is discussion on "Advancing Engineering Excellence: Skills for Navigating the Digital Frontier". The leadership workshop for women leaders will be held one day after the main conference days on the topic of Resilient Leadership. AOSEC 2023 will be held in Bangalore, India, from October 11th to 14th, 2023. The conference will bring together academicians, researchers, and industry practitioners from around the world to discuss and exchange ideas on the latest advancements and emerging trends in systems engineering. The conference theme for AOSEC 2023 is "Digitalization for Engineering Complex Systems." Registrations are open for the conference and more details can be obtained from the conference website: <https://aosec2023.in/>

Anabel Fraga Wins Society of Women Engineers Award



The Society of Women Engineers (SWE) announced the recipients of its annual awards program to recognize those who are making significant contributions to the STEM community and the advancement of women in engineering.

One of our very own, Anabel Fraga, is receiving an award - Distinguished Engineering Educator Award.

This award honors an individual who identifies as a woman, who has made significant contributions in STEM and have instructional experiences in an engineering, engineering technology, or science related to engineering educational institute. Let's congratulate and celebrate Anabel's achievements.

Words by Stueti Gupta, EWLSE Asia Oceania Sector Chair

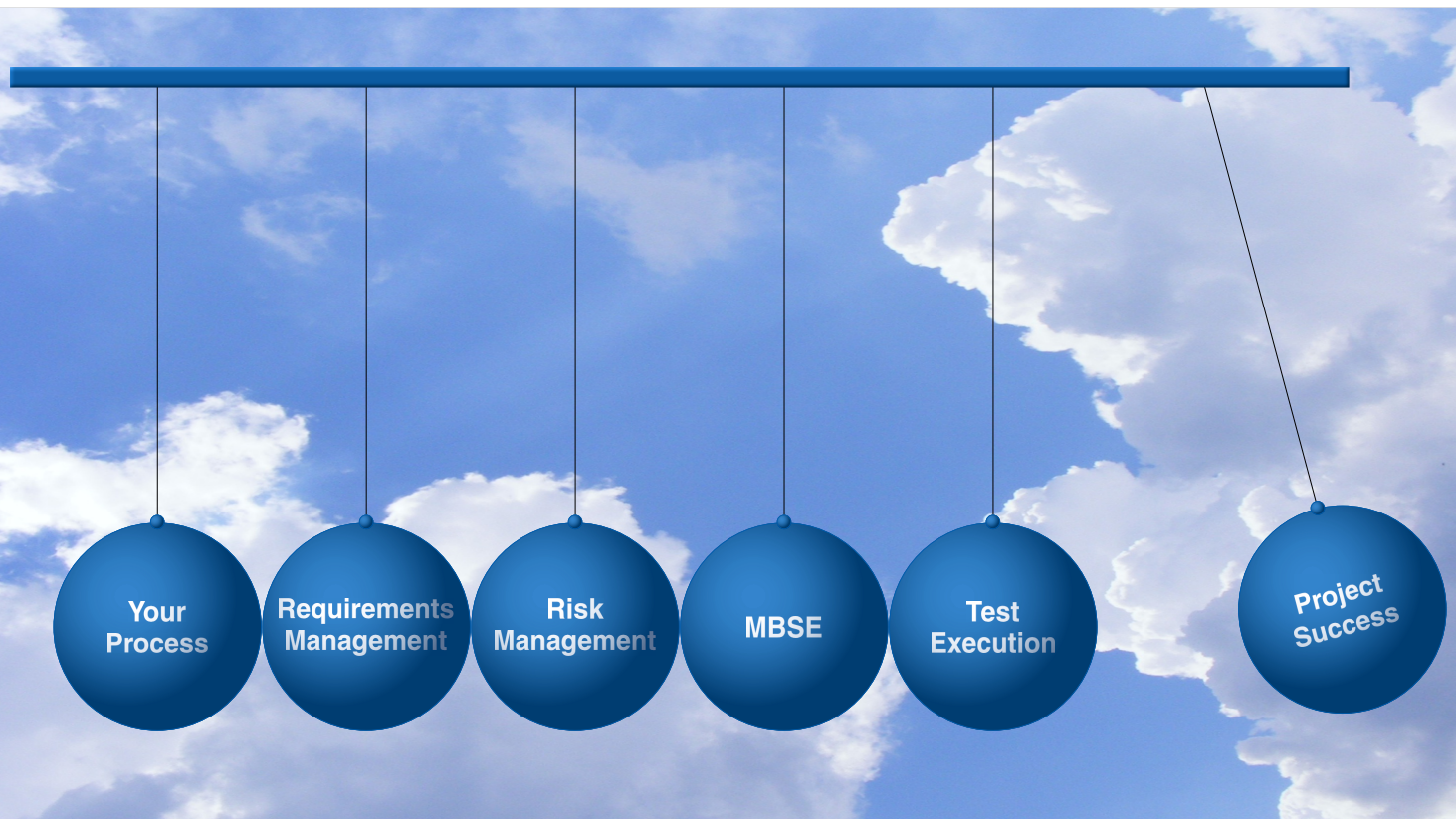


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To our customers of many years, 3SL would like to say a warm **“Thank you!”**

CHAPTER UPDATES

 Click on the chapter logo to go straight to their update



14th Asia Oceania Systems Engineering Conference (AOSEC)



Unlocking the Future of Engineering: Join us at the 14th Asia Oceania Systems Engineering Conference (AOSEC)

Are you ready to embark on a journey into the future of engineering? The 14th Asia Oceania Systems Engineering Conference (AOSEC) is set to bring together visionaries, professionals, and enthusiasts from across the globe to explore the theme of "Digitalization for Engineering Complex Systems." This four-day event will feature a dynamic blend of workshops, paper presentations, talks, and panel discussions.

Diverse and Enlightening Sessions

AOSEC kicks off with two engaging days of workshops, where attendees will have the chance to delve deep into the future of systems engineering. On Day 1, we are excited to offer a pre-conference workshop on the Future of Systems Engineering. Plus, don't miss out on tool workshops led by various industry vendors that will equip you with cutting-edge skills and knowledge.

A Glimpse into the Future of Engineering

The heart of AOSEC lies in its two-day main event, where experts and thought leaders will present papers and engage in discussions spanning various fields. Explore the latest developments in Automotive, Aerospace, Healthcare, Leadership, and Academia, all through the lens of Model-Based Systems Engineering (MBSE) and Digital Engineering.

Dive Deeper into Leadership and Strategy

After the main conference, we have curated a special treat for our attendees. Dive deeper into leadership with a workshop by EWLSE (Engineering and Leadership for a Sustainable World). Academia enthusiasts will find a dedicated workshop tailored to their interests, while those looking to master the art of "From Model-Based Systems Engineering to Systemic Digital Twins for

A promotional banner for AOSEC 2023. At the top left is the AOSEC 2023 logo. At the top right is the INCOSE logo with "Hosted by" above it and "India Chapter" below it. The main text reads "AOSEC 2023" in large white letters, followed by "Asia Oceania Systems Engineering Conference" in yellow. Below that is the theme "Theme: Digitalization for engineering Complex Systems" in white. The dates "11th - 14th October, 2023" and the venue "Venue: HAL Management Academy Auditorium, Bengaluru" are also in white. The background features a blue and white graphic with a globe and a building, and a circular inset showing a modern building at night.

"Mastering Complex Enterprise Operations & Strategy" will not want to miss our cutting-edge workshop on this transformative topic.

Elevate Your Credentials

AOSEC offers the opportunity for conference attendees to enroll in a paper-based INCOSE Knowledge Exam for ASEP/CSEP on Day 1 of the conference. This is your chance to validate your expertise and stand out in the world of systems engineering.

Join us at AOSEC and be part of a community that is driving the future of engineering forward. Register at www.aosec2023.in



(Thailand) INCOSE Thailand



INCOSE Thailand Chapter Start-Up and Engineering Institute of Thailand Partner to Raise Awareness of Systems Engineering in Thailand

On July 20, 2023, the Engineering Institute of Thailand (EIT) and the INCOSE TH Chapter hosted a joint event to raise awareness of systems engineering. The event was held at the EIT building and featured a presentation by Yew Seng on INCOSE SE topics and SEHB v5. The collaboration between INCOSE and EIT helped to build relationships and to promote systems engineering in Thailand. As a result of the collaboration, local members were invited to present and join a panel discussion at EIT's Annual Engineering Conference in November 2023.

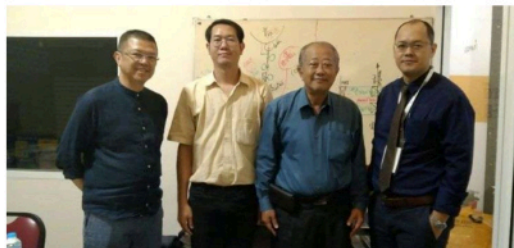
INCOSE and EIT are planning to continue their collaboration in the future. They are planning to hold a third meeting between December and January, and they are also planning to invite

INCOSE leaders to give speaker notes and reach out to local members. This collaboration is a great example of how INCOSE is working to promote systems engineering around the world. An INCOSE chapter can help to raise awareness of systems engineering and to build a stronger community of systems engineers.

Website: www.incose-thailand.org

LinkedIn Page: www.linkedin.com/company/incose-thailand

Update by Vorachet Jaroensawas



(Brazil) INCOSE Brasil



INCOSE Brazil's First SEP Cohort: Reflecting on the Journey

We're taking a moment to reflect on the journey of our first Systems Engineering Professional (SEP) Cohort organized by the INCOSE Brazil Chapter. This initiative aimed to provide support and resources for SEP candidates working towards certification. Here's a recap of the program's key points and outcomes:

1. Completion of the First SEP Cohort:

We're pleased to report the successful completion of our inaugural SEP Cohort. This group was formed to offer a structured environment for candidates preparing for the SEP certification. Throughout the program, participants engaged in study sessions, discussions, exam simulations, and shared experiences.

2. Cohort Journey: 14 Weeks of Consistent Effort:

Spanning 14 weeks, the cohort held 11 virtual meetings, averaging about 90 minutes each. These sessions comprised discussions on SE Handbook version 4, talks by guest system engineering experts, participant-led presentations to enhance understanding, and weekly quizzes to reinforce learning.

3. Engagement and Outcomes:

The cohort started with 16 participants from different backgrounds, diversified industries, and practice levels. Although an agreement about the program schedule and expected commitment was reached with all participants, 6 chose to discontinue, and 10 completed the program. At the moment, 8 participants have taken the SEP exam, and 7 have earned their SEP certification. This accomplishment underscores the commitment of those involved, the contributions of guest speakers, and the collaborative spirit of the INCOSE Brazil community.

4. Looking Forward:

Looking ahead, the INCOSE Brazil Chapter has plans for another cohort next year. Notably, some newly certified members from the first cohort are interested in giving back to the community by contributing to upcoming cohorts. This trend of growth among our certified community members demonstrates a positive trajectory for the INCOSE Brazil Chapter.

We express our gratitude to all speakers, participants, and contributors who played a role in the cohort's success. Your efforts have not only supported individual journeys but have also strengthened the culture of knowledge-sharing within our community.

Update by Raquel Hoffman,
raquel.hoffmann@incosebrasil.org.br



(USA) INCOSE Chesapeake



Chesapeake Chapter continues Platinum Award streak

The Chesapeake Chapter of INCOSE has won the Platinum Chapter Circle Award every year since 2015, and 2023 is no different.

"We were pretty excited to have earned it from last year's work," said 2022 President David Flanigan. *"INCOSE-CC has a long history of performing well in the chapter awards, so each year's chapter leadership strives to maintain our streak of doing well."*

Flanigan said he attributes the chapter's success to the commitment and focus of the Board of Directors. This includes being responsible for new and interesting speakers and events, updating social media and the website with upcoming events and recordings of past events, organizing the chapter surveys and distributing the monthly newsletters and much more.

"We have a pretty good idea of what to do during the year," Flanigan said. *"We know from experience that incremental progress on the award package throughout the year is definitely better than scrambling in December for all the documentation!"*

Certain events are a given. In the spring, the chapter provides judges to local middle school and high school science fairs. In the winter, the annual holiday gala celebrates member and sponsor participation, as well as recognizes new ASEP/CSEP/ESEP Certifications.

The leadership team also explores new events each year, such as a tour to the Guinness factory in Baltimore, a joint chapter event with the neighboring WMA chapter at TopGolf, and a tour at the University of Maryland's Air and Space Museum.

"We're always looking to reinvigorate the chapter with new ideas and activities as well supporting our traditional events," Flanigan said.

The Chesapeake Chapter leadership uses the award recognition as a means of recruiting members for different committees for continued chapter success.

Update by Beth E. Concepción

INCOSE Chesapeake Website

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(USA) INCOSE-LA



Platinum Award is result of years of work for Los Angeles Chapter

The Los Angeles Chapter of INCOSE, one of the largest chapters in the United States, with more than 470 members spanning over 40 organizations in industry and government. It's also one of the winners of the 2023 Platinum Chapter Circle Award.



"Our chapter members are excited to be part of a successful chapter and show their support by participating in our speaker meetings, tutorials and STEM events," said Chapter President Nazanin Sharifi. *"The volunteers who provide our platinum-level services are thrilled to see their hard work acknowledged."*

The award did not come easily. The chapter leaders and members spent plenty of time prioritizing technical topics and soft skills to focus on throughout the year.

"Receiving this award is the product of multiple years of pre-work," Sharifi said. *"Our chapter leaders have a strategic focus on member retention and*

engagement, supporting a vision that spans many decades of effort."

Sharifi said chapter leaders plan to capitalize on the momentum from the award.

"We will leverage the award as a mark of quality to increase engagement and find new collaborations within other chapters," she said.

She also said the leaders will work with INCOSE international leadership to streamline the award submission and tracking process *"to improve the ROI back to our chapter, with a focus on high-quality chapter events."*

Update by Beth E. Concepción

INCOSE-LA Chapter is co-sponsoring Our Annual Mars Rover Updates & Professional Society Expo on Saturday, Sept 30, 2023 at the Loyola Marymount University (LMU) campus.

This Tenth Anniversary Expo will feature 25+ exhibits from many LA & OC area Professional Societies (including several College Student Chapters!), plus several STEM-related talks (including latest Curiosity & JWST Updates!). Also featuring many STEM Hands-on Activities (eg, Rocket Launches, micro-robot mazes, balloon hovercraft & more!), free snacks, water & Space-related Raffle Prizes!

Free parking & admission! Volunteers welcome!

Further info: fredlawler@hotmail.com



(USA) San Diego



San Diego Chapter nabs fifth Platinum Chapter Circle Award

For a fifth consecutive year, INCOSE's San Diego chapter has taken home the coveted Platinum

Chapter Circle Award. The award recognizes the chapter's exceptional commitment to local services.

"[This] award is a testament to the many events we put on and how active the chapter is," said San Diego Chapter President Vincent Poteat.

Poteat attributes the chapter's streak to the sense of ownership that each member is empowered to take. The team diligently keeps each other accountable to meet the year's goals. Experienced team members often guide newer ones,

cultivating a consistent culture of excellence. It's this buy-in from the entire chapter that keeps them on their winning track.

"We really lean on the past lessons learned to ensure future success," Poteat said.

These lessons form the foundation of each new year. Poteat insists "success doesn't happen by accident." There is an enormous amount of planning that goes into crafting a clear vision for the year to come. Ultimately, it's the mission-forward effort from this dedicated team that has propelled San Diego year after year.



[INCOSE San Diego Website](#)

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conference on systems engineering research
March 25-27, 2024

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www.cser.info/call-for-submissions-2024

Conference on Systems Engineering Research 2024

The banner features a desert landscape with rock formations under a sunset sky. The text is overlaid on a white rounded rectangle in the center.

(Italy) Associazione Italiana di Systems Engineering (AISE)



AISE Action Lines: Objectives and Achieved Results

AISE (Italian Association on Systems Engineering, also INCOSE Italy Chapter) has identified a set of strategic activities pursuing the satisfaction of the AISE stakeholders' needs. These activities have been grouped into the following action lines: membership, networking, competences, professional qualification, and diffusion. All action lines are considered equally important, but the AISE management has decided to prioritize membership, competences, and networking because they can become drivers for the remaining action lines.

Membership

This action line aims to give more value to AISE membership and increase the sense of belonging. Over the past year, the membership team has been working to intensify direct contact with the members by promoting personal relationships and activities that stimulate the participation and engagement to the life of the association. The team has also work out a new communication strategy, which had changed the structure and dissemination of both newsletter and magazine, as well as an update of the website content. Great importance has been given to social networks, such as LinkedIn, which have been exploited to maximize the shares and promotion of information, activities, and successes. Surveys represent another important tool. AISE has currently released a first survey aimed at corporate and associate members. While the obtained results are being analyzed, the team is already working on the definition of two new surveys aimed at ordinary members and non-members. The survey represents for AISE one of the tools with the greatest impact for the growth and improvement of the association itself and for the approach of new members.

Competences

This action line aims to support the development

of knowledge in systems engineering through education, training, and certification initiatives. At the educational level, it is important to spread the systemic approach already at the secondary school level. Today's young people are facing increasingly varied and constantly evolving scenarios and will need to develop new skills. AISE believes that an effective collaboration with schools will support the growth of the new engineering generations. It will foster their talents and values as energy, passion, and a spirit of inclusion that should become the keystone in planning their future. Acting at this educational level facilitates the development of the strategic attitude, the propensity towards innovation and the programmatic and systemic mindset, as INCOSE is doing by its SYSTEAM paradigm. Following the success of last year's SYSTEM initiative, the education team repeated the event at the Enrico Fermi Industrial Technical Institute in Rome by proposing a three-day course on specific systems engineering topics to an audience made up of about 100 students. The initiative confirmed the expectations and provided great satisfaction. Therefore, it is one of the great successes achieved by the association thanks to the commitment and dedication of the education team, who is very active also in other fields, as for example the certification.

Networking

The networking increases the awareness, dissemination, and application on topics related to systems engineering. The AISE networking team was established in 2022 and since then its development has been constantly evolving and growing. Within AISE, it is strengthened by collaborations and synergies with other teams, in particular those responsible for the events, education, training, and certification. The communication strategy that has been adopted demands the use of both offline and online means for sharing knowledge, in line with the AISE strategic choices and Agile approach. The team applies brainstorming and brain-writing techniques, mind maps, effort/impact graphics

enabled through collaborative tools, such as Zoom, Miro, and Mural. The constant commitment to the diffusion of systems engineering within Italian universities and secondary schools has seen the organization and participation of various initiatives during 2022-23. These include STRATEGOS, an initiative with the University of Genoa and other initiatives with the secondary school ITIS Fermi in cooperation with the Education, Training, and Certification team. Currently, the team is focused on consolidating and activating new collaborations with other professional associations and in particular the PMI, Ordine degli ingegneri di Roma, and Lions Club. The ambition of the team is to continue to expand and improve relations with sector's professional associations, small and medium-sized enterprises, companies, and public authorities, as well as with others INCOSE chapters from all

around the world.

Update by Claudia Agostinelli, Networking Director, AISE



Italy Chapter Awarded Chapter Circle Platinum Award

The Italia INCOSE Chapter was awarded the Chapter Circle Platinum Award at the 33rd International Symposium in Hawaii.

According to Chapter President Francesco Dazzi, they owe their success to *"a cohesive and highly passionate team embracing the systemic approach for a better Italy and world"* who have carried out numerous activities at both educational and professional levels.

An example of this is with engaging educational institutions with the aim of teaching STEM students about the fundamentals of systems engineering with a focus on achieving global sustainability goals. The chapter also has organized or endorsed webinars and workshops with experts in project management, product development and other disciplines necessary for engineering man-made systems successfully.

Dazzi said the reaction to the award from the chapter members was quite something. *"It has certainly sparked curiosity and interest among our*

followers, even from those who are not affiliated, and in other professional associations".

Dazzi and his team, including Giulio Telleschi, Claudia Agostinelli and Fabrizio Mantelli, hope that this reaction will have a lasting effect. *"[We hope it will result in] an increase of requests to join our chapter, strengthening of existing collaborations with other organizations, and establishment of agreements with new partners,"* Dazzi adds.

To capitalize on the award, the chapter plans to continue along their current path with the aim of increasing not only the number of members but also enhancing the networking between members coming from different sectors. Dazzi said, *"This will involve engaging scientific disciplines such as biochemistry, medicine and biology, which have now become integral components of expanded mechatronic systems."*

Dazzi said the chapter leaders plan to increase the overall awareness on the link and benefits of INCOSE and AISE and especially on the needed effort to reach the awards. A dedicated communication plan is under development, and it will include newsletter and both in-person and remote events.

Update by Nicholas Cotton



(Norway) INCOSE Norway

The Annual Kongsberg Systems Engineering Event (KSEE) took place 14-15 June at the University of South-Eastern (USN) Norway, Kongsberg.

The KSEE 2023 event unfolded as a collaborative effort between the University of Southern Norway (USN) and the Norwegian Society of Engineers and Technologists (NORSEC). Over the course of two days, this event brought together 65 systems engineers and practitioners from the Kongsberg/Oslo region, fostering a unique environment for knowledge sharing, networking, and innovation.



Day 1

The highlight of the day was the keynote lecture by Dirk-Jan Swagerman, from Buffadoo in the Netherlands. His presentation, titled "Better Together: How System- and Software Engineers Can Cooperate to Innovate Faster," emphasized the critical need for collaboration between system and software engineers to accelerate innovation.

Throughout the day, attendees had ample opportunities to connect and engage with one another during breaks designed for networking. In addition to the keynote, three other speakers shared their research findings, further enriching the discourse on systems engineering.

As the day drew to a close, a tapas buffet was organized, providing attendees with an opportunity to unwind, share insights, and continue building connections in a relaxed setting.

Day 2

The second day of KSEE 2023 began with a breakfast and a dose of caffeine to fuel the day's discussions. The morning's sessions commenced with a presentation by Karen Czachorowski, who explored "Future Trends and Innovations in Software for E&P and the Challenges in Software and Data Integration During System Development."



Following Karen's talk, two speakers from the University of South-Eastern Norway shared their insights, contributing valuable perspectives on the subject matter. The event culminated on day 2, around lunchtime, with a keynote address by Prof. Martin Törngren from KTH Stockholm. His presentation, titled "Towards an Era of Smart Life Cycle Connected Cyber-Physical Systems - What are the Implications for SE, or ... When is an Automated Vehicle Ready to go?" delved into the fascinating world of connected cyber-physical systems, focusing on their implications for systems engineering.

KSEE 2023 proved to be a successful and enlightening event, showcasing the power of collaboration and knowledge exchange in the field of systems engineering. It brought together professionals and academics, fostering an environment where ideas flowed freely, and insights were shared generously.

Update by Satyanarayana Kokkula

(UK) INCOSE UK



ASEC 2023 Booking Now Open

INCOSE UK is pleased to announce that booking for the Annual Systems Engineering Conference 2023 is open!

Now in its 14th year, ASEC is the UK's flagship Systems Engineering conference, attracting a wide range of industry, academic and government professionals. This year's ASEC is being held in Liverpool at Spaces at The Spine, a world-class, dynamic events venue.

Register for ASEC 2023 at www.asec2023.com

We look forward to welcoming you in Liverpool for ASEC 2023 on the 21st and 22nd November, 2023.

Virtual Endorsed Training Provider Event

We invite you to take part in the Systems Engineering Fundamentals Course taking place Online from the 4th - 6th December 2023.

The course, run by Burge Hughes Walsh Limited, is focused on the concepts, principles and practices of Systems Engineering and offers a comprehensive learning experience suitable for diverse participants. Specifically tailored to cater to the needs of individuals who are new to Systems Engineering, the course provides them with a comprehensive overview and practical, applicable knowledge and skills.

For more information, and to book your place on this course, visit the [INCOSE UK website](http://www.incose.org.uk). For more information on Burge Hughes Walsh, [visit their website](http://www.burghugheswalsh.com).

Paper Presentations

The INCOSE UK Paper Presentation series grants award-winning presenters from past Annual Systems Engineering Conferences the chance to showcase their papers once again.

So far, the series has showcased "The Open Source Satellite Programme: Using Systems Thinking and MBSE to Align the Team and Explore the Problem" presented by Vicky Anderson based on her winning presentation at ASEC 2019, and "Interface Management - The Neglected Orphan of Systems Engineering" by Paul Davies, another winner at ASEC 2019.

Both presentations are available for viewing on the [INCOSE UK YouTube Channel](https://www.youtube.com/channel/UCy0RmZ8zCkzRQdVtUgKl5w).

Paper Presentation

"The Open Source Satellite Programme: Using Systems Thinking and MBSE to Align the Team and Explore the Problem"

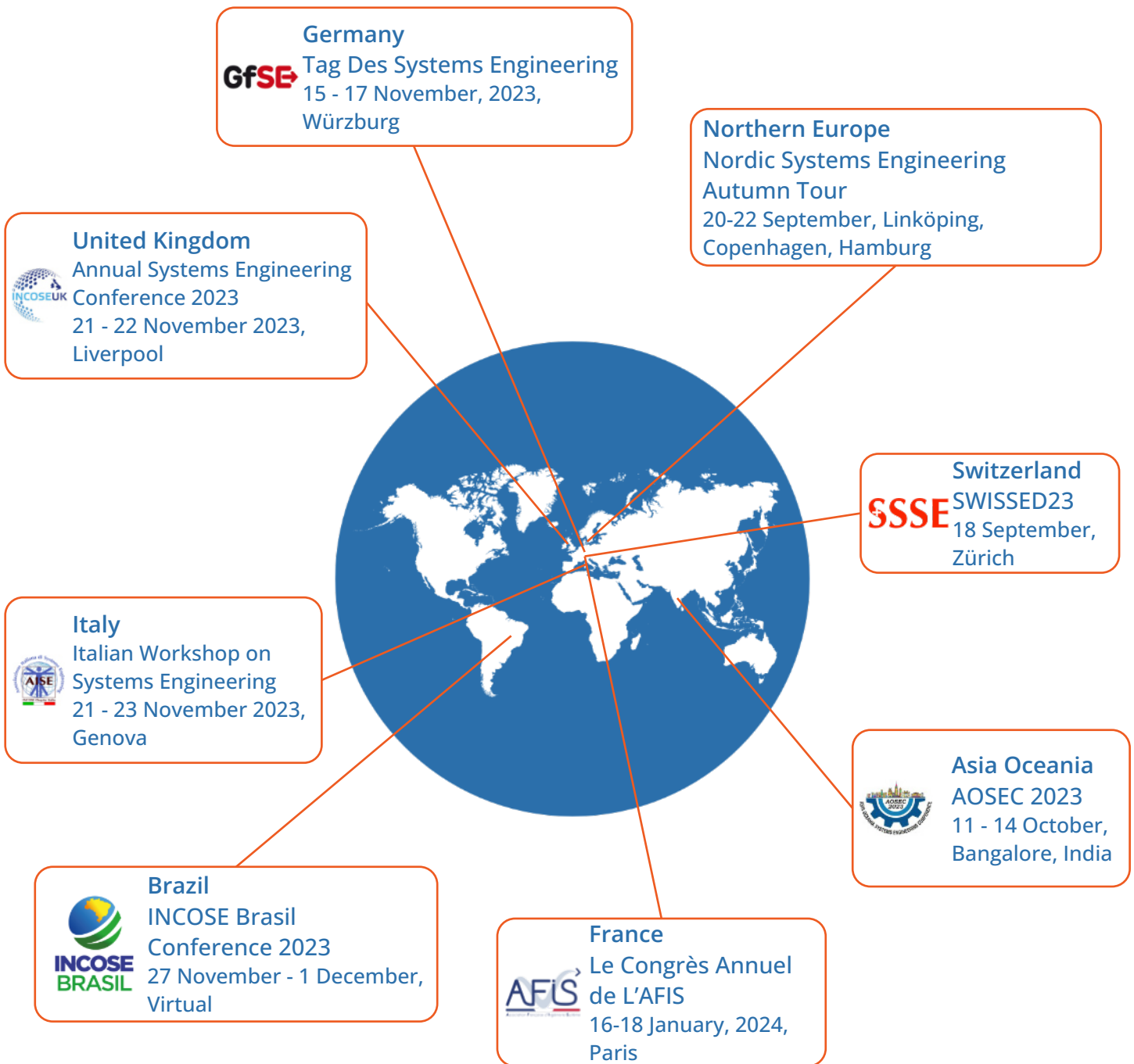
Vicky Anderson

 [INCOSE UK Website](http://www.incose.org.uk)

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[WWW.ASEC2023.ORG.UK](http://www.asec2023.org.uk)

Chapter Conferences



Hot Tip! How to View My Chapter Directory

Hi Friends!

With our move to a new membership management system, Rhythm, we're all still in the process of figuring out how to do things in new ways.

Lucky us, we're a bunch of Systems Engineers who are experts at learning new things and embracing technology!

One common question is "How do I view the members of my Chapter?" The INCOSE Central team has been developing guides for common tasks and has one just for this.

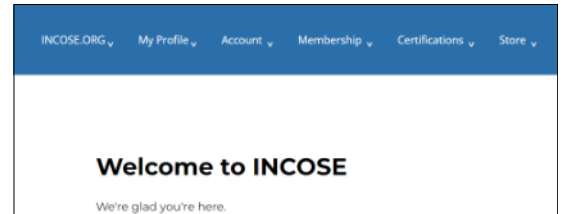
Note: "HowTo_ViewChapterDirectory" is available to all INCOSE members and only includes those that have opted into the directory.

Similar search capability is available for working groups, too.

By Molly Kovaka, INCOSE IT Project Manager

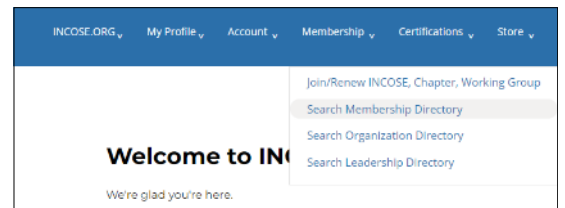


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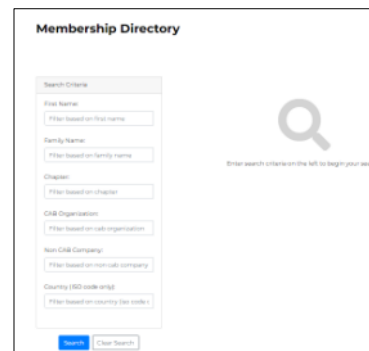
Log in to www.incose.org. From the banner menu, click on "Membership."

2



Click on "Search Membership Directory."

3



Type in your Chapter name. Click Search.

INCOSE Events Require Years of Planning

More than a thousand people attended the 33rd Annual INCOSE International Symposium (IS) in July – either in person in Hawaii or virtually – the most participants an IS has ever had.

A successful Symposium requires hundreds of hours of preparation. To ensure that the event was a success, the INCOSE Events Committee started working on it nearly two years ago.

"We begin planning for an event at least two years in advance – starting with selecting a venue. By the time the IS kicks off, we have talked about all aspects of the content – delivery, food, social events, and more – for at least that long," said Donna Long, Associate Director of Events. *"The hardest part is balancing the wants and desires of all the stakeholders and attendees. INCOSE is an increasingly diverse organization and the International Symposium should have something for everyone."*



New members and people earlier in their system careers benefit from programs such as the Fundamentals Track, which is dedicated to foundational concepts in systems presented by a dynamic subject matter expert. The technical papers provide an opportunity to highlight advances in research and practice and cover the spectrum of experience levels. Invited content allows opportunities to make sure the most critical



strategic messages from INCOSE are delivered, and the paperless presentations give industry members more opportunities to share advances in practice.

"And of course, all of this has to work within the allocated budget," she said.

During the event itself, the team puts in long days to make sure everything goes smoothly.

"The team meets at 6:30 a.m. every day (including on the tutorial days) to ensure that all the sessions, including the plenaries, are ready to go and are the best we can make them," she said. *"We look at all the items that will eventually impact the attendees as well as the speakers. We talk about issues that came up the day before to see how we can address them and prevent similar issues from occurring during that event and going forward in future."*

The Associate Director for Events and the Master of Ceremonies may be the most visible members of the Events Committee during an event, but there are dozens of other volunteers who make things work. Dozens of people volunteer as session chairs. The Technical Program Committee runs all of the speakers' sessions to ensure that presentations are uploaded, speakers are prepared, and any last-minute program gaps are filled. Then there are the hundreds of people

participate in panels, deliver presentations, and participate in tutorials.

Donna said the end result is worth the work.



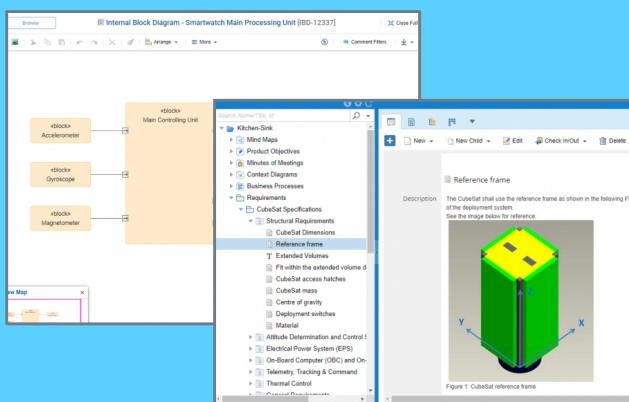
"It is rewarding to see the event that we have been working on for years come to fruition, to hear that attendees are getting valuable information from the technical sessions, that the social activities are being enjoyed," she said.

Long also said she encourages INCOSE members to fill out the post-event survey for each event. If they miss that opportunity, they should send an email to her (donna.long@incose.net) or the Symposium account (symposium@incose.net).

"We can look to improve future events only with your input," she said. "And please come to the events. You gain immeasurably from going to INCOSE events by networking with other attendees."

Words by Beth E. Concepción

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The Growth of Student Engagement with INCOSE

We are delighted to inform you of our plans, for 2024, to foster growth of the student engagement with INCOSE.

This coming year we will focus on the events surrounding IS, IW, and the Conference on Systems Engineering Research (CSER) through expanding the Systems Engineering and Architecting Doctoral Student Network (SEANET). Additionally, we have funding for awards, which will go to the best student divisions. With these plans, we are revitalizing our student participation with INCOSE.

SEANET is an INCOSE sponsored organizational network of doctoral students working in the field of systems engineering and architecture. The purpose of SEANET is to advance systems engineering research by providing a collegial support network, research resources, and contacts that will enable the completion of doctoral dissertations related to systems engineering. In the past, SEANET has been a sole event held in conjunction with CSER. This year, we are expanding SEANET to also be held in conjunction with IW and IS. The focus of the three SEANET events is as follows:

1. SEANET @ IW will focus on guiding the doctoral students in their journey to find a research question. Practitioners will aid students in understanding what questions are important to the practice of systems engineering. Academics will guide students on methods of proving the question has (or has not) been addressed.
2. SEANET @ CSER will focus on building a community of doctoral students and academics. Students will be guided by academics in reaching an understanding the overall process of achieving a PhD.
3. SEANET @ IS will focus on disseminating systems engineering research to the community. Academics are expected to help students frame the research in terms of

questions and answers. Practitioners are expected to help students frame the research in terms of problems and solutions.

Volunteers for SEANET participation are requested. While an academic cadre of participants for SEANET @ CSER are known, we will need new participants of both practitioner and academic variety to join us for SEANET @ IW and SEANET @ IS. If you are interested, please contact me at the email listed below.

Awards will be focused on all students; whereas, SEANET is solely focused on doctoral students. The awards will be granted to student divisions based on engagement with INCOSE. Awards will be made on August 31st, 2024, in close alignment with the academic calendar. For this upcoming year, the award period is from January 1st, 2024 through July 31st, 2024. INCOSE has allocated \$2,500 to student division awards, which will be granted to student divisions with the top performance in:

1. Collaborative activity on the INCOSE student division platform hosted on Discord
2. Participation in IW and IS events

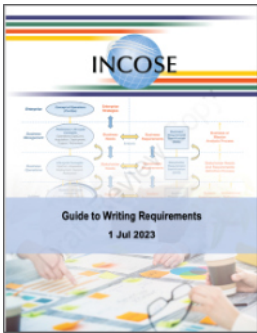
Note, for consideration of awards, student divisions must be recognized by INCOSE and students must be registered members of INCOSE. As part of my responsibility, I will be updating the information for all INCOSE student divisions. Sponsoring chapters and faculty advisors are expected to help with this process. Further detail will be provided by December 2023, after accounting for the expected updates to information specific to individual student divisions are captured.

We look forward to growing student involvement with INCOSE.

Update by Paul Wach, PhD, INCOSE Assistant Director for Student Matters,
paul.wach@incose.org

Requirements Working Group (RWG)

The Requirements Working Group (RWG) has been very active over the last several months. In June, we released version 4 of the INCOSE Guide to Writing Requirements (GtWR).



The RWG leadership gave a presentation in July to the ChicagoLand Chapter “Sustainability Needs and Requirements” and a presentation to the Texas Gulf Coast Chapter “Guide to Writing Requirements” that provides an overview of the newly released GtWR.

At IS2023 we had a general RWG hybrid meeting as well as an online joint meeting between the INCOSE Systems Engineering Quality Management Working Group (SEQM WG), the Requirements WG leads and working group members. The focus of this session was exploring common ideas and concepts concerning quality management from the perspectives of requirements as well as a discussion on future interactions and collaboration between WGs.

A presentation "Applying AI to MBSE" was given at the RWG August monthly meeting by Rosemary Kioko and the SSA Inc Team. The purpose of this presentation was to share their current study and solicit feedback from the RWG. The goal of the study is to create tools using AI to assist engineers in creating and managing requirements. This presentation provides insights on how the SSA Inc Team is exploring applying AI to MBSE with an emphasis on requirements development and traceability. They have selected several use cases as a starting point. The selected use cases cover writing requirements (i.e., providing suggestions/ auto-complete), organizing requirements (i.e., data attributes, categorization, and prioritization), requirements quality (i.e., measuring and improving requirements via suggestions), and modeling requirements (i.e., generating

architecture, relationships, and test specifications).

During our September monthly meeting, Ilyes Yousfi, from The ReUse Company (TRC) will give a presentation “Implementing the latest concepts of the new GtWR v4.0” discussing several of the updates to the INCOSE Guide to Writing Requirements. These updates include a further alignment with other products produced by the RWG updates to help users distinguish needs from requirements, either while writing, or verifying the requirements showing how the rules in Section 4 of the Guide can be adapted to either need statements or requirements statements.

The RWG makes all our monthly meeting and chapter presentations available on the [INCOSE RWG YouTube Channel](#). We also provide links to the presentations on the [INCOSE Requirements Viva Engage](#) (Yammer) site.

Current and future activities involve providing updates to the [SEBoK](#) that will result in closer alignment with the newly released INCOSWE SE HB v5 as well as the RWG products. This effort is being led by the RWG Chair, Tami Katz. Another key activity is the update of the INCOSE RWG Needs and Requirements Manual in preparation for its publication by Wiley. This effort is being led by the RWG Co-Chair, Lou Wheatcraft.

As always, the RWG would love to hear from you all concerning suggested topics for our monthly meetings, suggestions for SEBOK updates, updates to the NRM (and other guides). We would also like to hear about success stories concerning how you and your company are applying and benefiting from the RWG suite of products. You can reach the RWG leadership at this address: requirements-leaders@incose.net

By Lou Wheatcraft, Requirements Working Group Co-Chair

Smart Cities - A Fresh Approach

People make a smart city successful

Success in a smart city “has nothing to do with technology and has to do with people. We need to invite the public into co-creating these experiences with high degree of civic engagement. Cities need to be engaged with the public around connecting communities.” – David Graham Chief Innovator Officer for the City of Carlsbad, California

This statement and additional evidence of rising frustration with smart cities’ implementation warranted a fresh approach that inspired the INCOSE Smart Cities initiative. The INCOSE Smart Cities Initiative draws upon the experience and knowledge of INCOSE members to support communities in developing their Smart Cities Concepts, Applications, Technology and Services (CATS) by leveraging systems engineering tools and principles.

Many implementations within smart cities focus on technology and providing technology to support specific features. However, the focus on technology often results in solutions that fall short of expectations. These solutions often don’t have a connection to fulfill a need of the city and the people in the city.

Humans have fundamental needs, many of which are fulfilled in their city

Noting this industry trend in 2019, which continues today, we recognized the potential value that systems engineering and INCOSE could contribute. To capture our focus, we propose:

1. Humans belong at the center of the smart city.
2. The objectives of the city need to be dynamic to adjust over time in order to best meet the increasing needs of the residents.
3. As closed loop systems, cities must aim to effectively link digital data solutions to human

needs with a feedback loop that allows for growth and dynamic adjustment.

The technology should be used to meet the needs of the humans, and a smart city should be a place where the systems meet the needs of its residents. We need everyone to be engaged to get a complete view of reality.

To anchor the human needs in an accepted definition, we selected the Max Neef definition of human fundamental needs. These nine fundamental needs (Figure 1) offer a broad characterization of the human needs that are often met within the context of a city.



Figure 1: Human Fundamental Needs at the heart of a smart city

The common mission of a smart city serves as the central purpose of a city

With clear definition of the human needs at the focus, we defined typical stakeholder groups within a city that could be applied in a global perspective. These stakeholders all have distinct, dependent, and integrated roles and

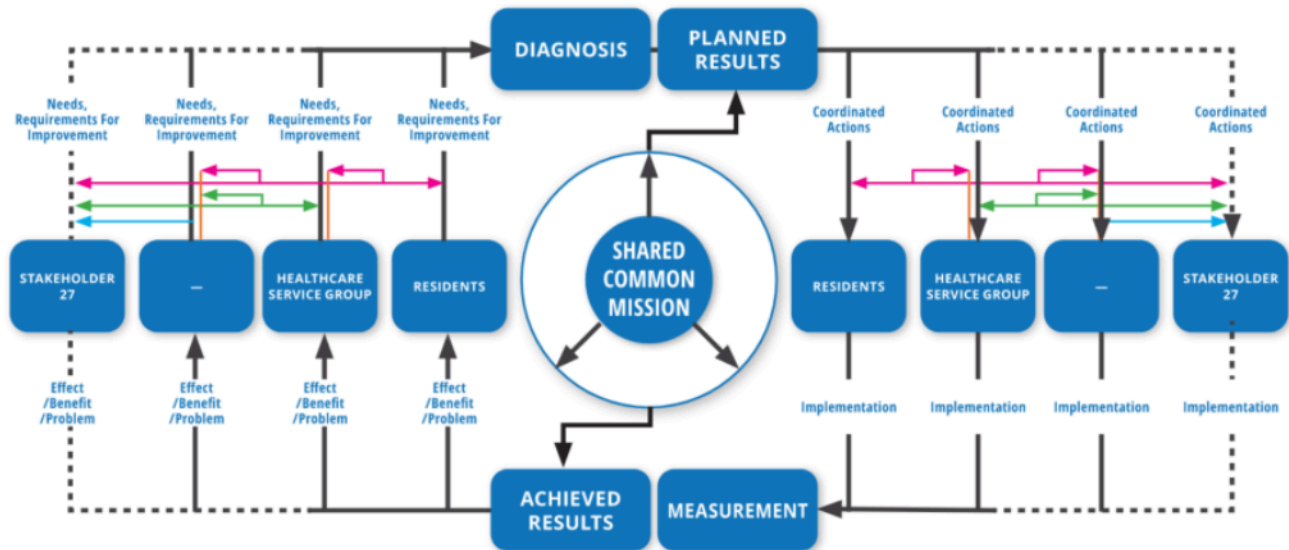


Figure 2: INCOSE-TUS Smart Cities Framework

responsibilities. Therefore, we developed a social system model that included a Plan-Do-Check-Act (PDCA) plus Leadership cycle. Linking the leadership role into the PDCA cycle integrates the common mission. The leadership and common mission are what binds together the activities, roles, and responsibilities for each part of the system. The INCOSE-TUS framework (Figure 2), connecting a sample of city stakeholders, illustrates the connectedness and dependencies between the stakeholders.

Measuring success varies for each city. A set of holistic metrics provide a consistent benchmark for evaluation and comparison. The metrics are intended to be tailored per the common mission and goals of the city and are measured by engineered quality data (Figure 3).

Much has been done to establish a baseline and common vision for a fresh smart city; much more will follow. With a clear, consistent definition and framework, the Smart Cities Initiative team is involved in case studies and working with others to apply the concepts and definitions included in our first Technical Product. We hope you will peruse our newly released publication, and engage with us to continue refining and enhancing what we've started. If this inspires you, perhaps there's an opportunity for you to help share these concepts in your own communities.

Plug in with us! www.incose.org/incose-member-resources/working-groups/transformational/smart-cities Hope to see you at the next meeting, IW, or IS!

Update by Jennifer Russell, EISE, CSEP, Smart Cities Working Group Co-Chair



Figure 3: Features of Engineered Quality Data



Making history: A Look at the 2023 SySTEAM Mini-Conference

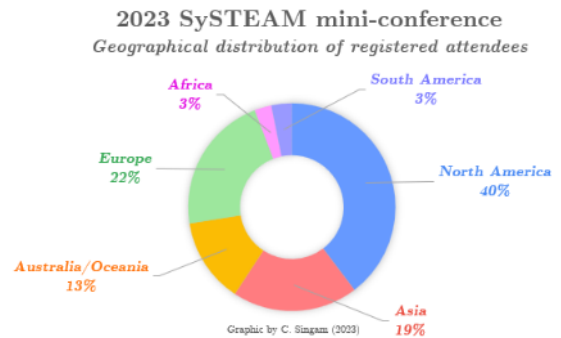


“You can never be overdressed or overeducated,” quipped Oscar Wilde, and while we at SySTEAM are perhaps not the ideal candidates to remark on the former half of that statement (not, as it happens, being particularly known for our sartorial splendor), we certainly can express our approval of the latter.

As per the SySTEAM vision of “improving education for all students, everywhere”, the SySTEAM Initiative has always championed the idea that learning is a lifelong journey, and that the interdisciplinary nature of systems means that there’s no such thing as too much knowledge. It is in fact one of SySTEAM’s founding principles that every individual, no matter where they are in their career or what career they are in, can stand to benefit from interdisciplinary systems education; SySTEAM community members, lifelong learners that they are, are no exception. Indeed, the ever-evolving world of the didactic arts means that there’s always room for one to continue one’s education about matters of education, and – if one is so inclined – to do so with style as well.

This summer, SySTEAM had the opportunity to put that concept into action. On July 27th and 28th, 2023, SySTEAM community members and affiliates got to swap their office casuals for conference chic as they gathered online to learn, share, and debate the latest ideas in systems education, at SySTEAM’s first-ever mini-conference. The two-day virtual event reflected much of SySTEAM’s own verve as well, with elements of the initiative’s strategic priorities and core values peeking through in aspects of the event’s logistics ranging from the mini-conference’s open-access registration policy, its multi-platform participation options (including YouTube livestreaming and asynchronous Q&A options on Discord), and beyond. A slate of contributed talks, papers, and posters mixed in with short discussion workshops served as the pithy core of the conference itself, providing attendees with ample opportunity to learn from others’ experiences and perspectives and to share their own.

Content Curation



Content for the mini-conference program was selected based on a SySTEAM-run double-blind peer review evaluation process. This process was developed by the SySTEAM initiative lead and conducted within an accelerated two-month time frame. Each submission was peer reviewed by 2-3 independent volunteer peer reviewers, who were matched with each submission based on their relevant expertise/knowledge. Selection decisions were made based on reviewer scores and written feedback across five criteria (scope, significance, technical merit, clarity, and readability). Interested individuals can view the conference schedule and selected papers/posters via the files posted online on the SySTEAM website, incose.org/systemam.

Outcomes

Regardless of the outcome, this mini-conference would have been a historic moment for SySTEAM not only by virtue of being the initiative’s first conference but also in terms of marking a number of other milestones. SySTEAM’s first multi-day event, first showcase of internally peer-reviewed content, and first livestream/simulcast event. It would arguably also merit consideration as a logistical achievement as the event was organized on an accelerated timescale (with just around four months separating the preliminary conference announcement/call for papers at the start of the conference development period from the mini-conference itself) using a custom peer-review process, and only requiring a single conference

WORKING GROUPS AND INITIATIVES

organizer, a small group of volunteer peer reviewers, and zero expenses.

The moment was made ever sweeter, however, by the fact that the mini-conference was, in fact, a smashing success. Regular readers of this newsletter and dedicated SySTEAM aficionados (should they exist!) will likely recall the initial goal set out for this event in the December 2022 newsletter was simply to “provide members of the SySTEAM community and other interested individuals with the opportunity to showcase their projects, ideas, and efforts on SySTEAM-adjacent topics [to] a community of peers”; based on the attendee feedback SySTEAM has received, it would seem as if that goal was well accomplished. Attendees have been consistently positive in their feedback about the mini-conference in their responses to SySTEAM’s post-conference survey, with some individuals expressing a keen interest in seeing in-person SySTEAM conferences in the future.

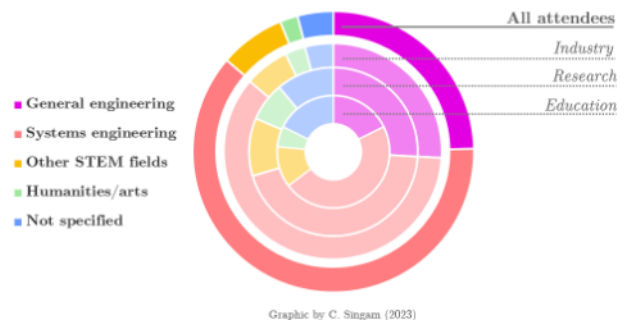
Most impressively, turnout for the mini-conference far exceeded SySTEAM’s expectations. The event drew a highly diverse audience of 200+ registrants from across six continents, 30+ countries, and 21 (of a total of 25) time-zones. Among those participants were individuals from all parts of the STEAM career pipeline and from both inside and outside of the INCOSE community, ranging from students embarking on the start of their professional journeys to seasoned industry veterans. The mini-conference audience also included educators, practitioners, and innovators from across the STEAM community, including arts & humanities experts and STEM specialists alike – all united by a common interest in systems education.

Significance

“So vast is art, so narrow human wit:/Not only bounded to peculiar arts,/But oft in those, confin'd to single parts,” despairs Alexander Pope in An Essay on Criticism. The sentiment certainly captures one of the fundamental struggles of interdisciplinary education efforts, in that the sheer difficulty of bringing together individuals from different specialties – let alone different parts of the world – is often a key limiter in any attempt at a unified educational effort. It is heartening, then, that the success of the mini-conference not only confirms that there is a

worldwide interest in interdisciplinary systems content from both inside and outside the INCOSE community, but that SySTEAM is successfully making inroads into developing and encouraging that interest.

2023 SySTEAM mini-conference
Attendee specialties by sector

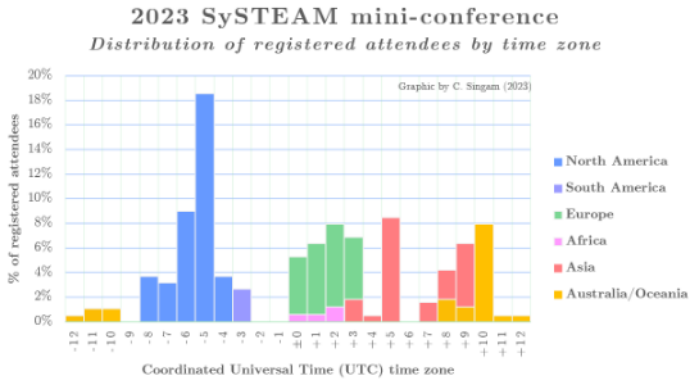


The high level of worldwide engagement with the SySTEAM mini-conference also provides validation for SySTEAM’s semi-autonomous approach to strategy decisions, and evidence for SySTEAM managing to build value for INCOSE with minimal resource consumption. SySTEAM’s choice to employ an open-door membership/participation policy, for instance, which was met with a certain degree of antipathy by some in SySTEAM’s early days, has reaped dividends in terms of fostering more diverse engagement, demonstrating INCOSE as an organization of value in areas beyond systems engineering, and in bringing INCOSE ideas/products to new audiences within the broader STEAM community. One can imagine that, given the resources to support its strategic decisions on a larger scale, SySTEAM would be well-positioned to expand its support and development of INCOSE’s outreach and academic engagement interests beyond just systems engineering and into the global STEAM community.

More importantly, however, the mini-conference represents a successful next step in SySTEAM’s continued quest to promote the widespread integration of systems competencies into education. SySTEAM has now demonstrated not only its ability to directly advocate for the integration of systems competencies into STEAM, but its ability to also build a robust, worldwide network of systems-minded individuals who are eager and capable of advocating for those recommendations in their own schools,

WORKING GROUPS AND INITIATIVES

workplaces, and communities. The mini-conference, in a way, served as a test of SySTEAM's ability to serve as a force for global change, and whether SySTEAM is just as adept at galvanizing an audience as it is at gathering one. If the enthusiasm for the mini-conference is any reflection, it is a test SySTEAM has passed with flying colors.



Join INCOSE SySTEAM

We always remain on the lookout for new community members, and welcome any interested individuals to join us online via our free Discord community hub (join link: <https://bit.ly/3oy1GmF>). Regardless of your professional background, location, or level of commitment, there's likely something you can contribute to SySTEAM. If you would like to join SySTEAM, or are interested in learning more about the initiative, please contact the SySTEAM initiative lead and Program Director, Caitlyn Singam, at caitlyn.singam@incose.net.

Update by Caitlyn A. K. Singam, SySTEAM Program Director, caitlyn.singam@incose.net

Next SySTEAM Meeting: GBM #14
October 5th, 2023 @ 10AM to 12PM Eastern
Zoom link: bit.ly/3B8Waf7

Everyone is welcome and encouraged to attend, regardless of professional affiliation or INCOSE membership status.



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New Launch: Systems Engineering Laboratory

INCOSE is excited to announce the launch of the Systems Engineering Laboratory; a new exclusive resource for INCOSE Members.

The vision for the INCOSE Systems Engineering Laboratory (SE Lab) is a computing environment (or set of environments) where INCOSE members can use real, full versions of systems engineering tools for non-commercial INCOSE purposes, for learning, and for INCOSE projects, at no cost to the member or to INCOSE. Tool Providers participate to gain exposure for their products, and for modest promotional consideration and acknowledgment for their contribution of product availability.



The mission of the SE Lab is to foster collaboration and knowledge sharing through a state-of-the-art computing environment for systems engineering advancement.

Products in the SE Lab may be used in combination, such as a requirements management tool from one Tool Provider in combination with a SysML modeling tool from another, as enabled by integrations provided by the Tool Providers, or by a third-party integration provider.

Products offered in the SE Lab may be used for non-commercial purposes, including:

- INCOSE projects, e.g., project for the INCOSE organization, or projects in support of an INCOSE initiative, working group, chapter, or other INCOSE activity;

- Learning and experimentation, e.g., to learn how to use a product.
- Educational purposes, e.g., classroom exercises, projects, homework, etc.

The SE Laboratory is one of the great benefits of INCOSE Membership. If you are not yet a member, [join today](#) to access the SE Laboratory.

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INCOSE Handbook to be Translated Into Seven Languages

INCOSE Publications is happy to announce that licenses have now been secured to translate the SE Handbook, Fifth Edition into various languages.

This is the result of conversations with Sector Directors, Handbook editorial team members, INCOSE leadership and Wiley & Sons, which publishes the SE Handbook.

The languages are: French, Italian, Portuguese, Russian, Spanish, Turkish, and Polish. There will also be translations in German and Chinese, negotiated separately; and, the expectation that Korean and Japanese translations will also appear, although agreements for those have not yet been finalized.

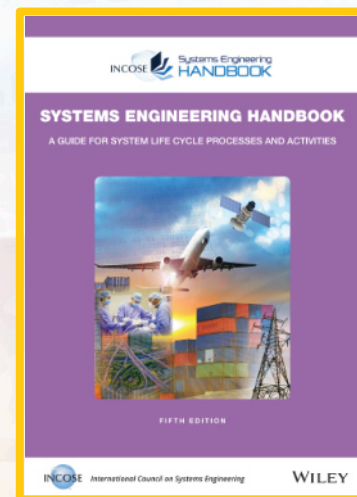
Translations will be performed by the appropriate chapters and follow the requirements of INCOSE's Tech Ops TPP process. Once a translation is completed and approved, chapters will be able to market the work to their own members as well as other users. It will also be available in the INCOSE Store.

This is a unique arrangement. Typically, a publisher sells the rights to publish to a traditional third-party publisher. In some cases, the market is too small so, rather than forgo a translation, INCOSE proposed to Wiley that individual chapters become "publishers" for this purpose. They agreed.

This marks a step forward in implementing the INCOSE goal for all resources to be widely available to develop a global community of systems engineers and systems approaches.

 Handbook Webpage

INCOSE Systems Engineering Handbook 5th Edition



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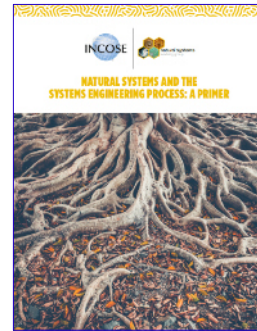
Smart Cities Initiative



The Smart Cities Initiative proposes a human-centric model to help city authorities to make decisions with human needs in mind. Such a human-centric model will help identify and classify technological investments with the greatest positive impact for their residents. This presentation will introduce this human-centric model, the INCOSE-TUS Smart Cities Reference Model.

Read it at www.incose.org/smartcities

Natural Systems and the Systems Engineering Process: A Primer



This Primer on natural systems expands on the material in the INCOSE 5E handbook and suggests further detail. It was developed for the larger systems engineering (SE) profession as well as project managers to introduce and integrate natural systems work into systems engineering. Designed as a calling card, this Primer is a technical product

Read it at www.incose.org/naturalsystemsprimer



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Systems Engineering Journal

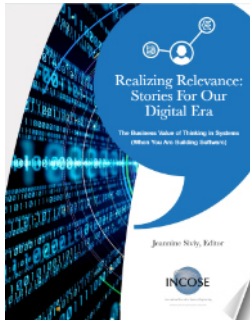


Systems Engineering Journal Volume 25, Issue 5

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

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Realizing Relevance: Stories for Our Digital Era



This eBook is brought to you by the INCOSE Systems and Software Interfaces Working Group. Our mission is to increase the relevance of systems engineering and systems thinking in business settings that are software- and data-intensive, enabling the resilience of organizations and the products, systems and services they produce.

Read it at www.incose.org/realizingrelevance

INSIGHT

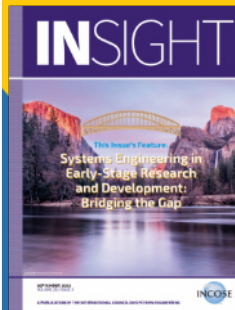


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INSIGHT Volume 26, Issue 3

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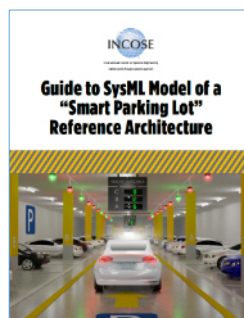
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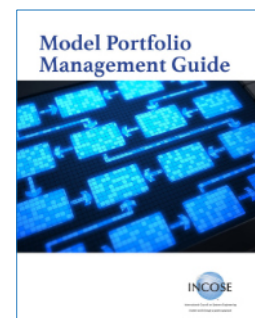
Launching Soon



Human Systems Integration Primer



Guide to SysML Model of a Smart Parking Lot Reference Architecture



Model Portfolio Management Guide

Prof. Dr. Eduard Igenbergs

Technology Pioneer, Systems Engineering Advocate, and Unforgettable Mentor (1936-2023)



Prof. Dr. Eduard Igenbergs, a renowned name in the world of Aerospace, took his last breath on June 17, 2023, at the age of 87. Not just a beacon in space technology and a foundational pillar of aerospace engineering at TUM, he was an extraordinary personality,

known for his wit, humor, and invaluable wisdom.

Born in Prague in 1936, Eduard's roots were richly embedded in linguistic diversity due to his father's diplomatic service. Completing high school at Wilhelms-Gymnasium in Munich with a humanistic focus, he later pursued his Mechanical Engineering degree at TH München, with a brief yet enriching academic tenure at ETH Zurich. By March 1961, he emerged as a Mechanical Engineer, ready to chart unexplored territories in aerospace.

His early years of research were fostered under Prof. Dr. E. Truckenbrodt at the German Society for Flight Sciences, laying the groundwork for Germany's premier aerospace engineering course. A transition in 1963 saw him delve into fluid mechanics, culminating in the birth of the aerospace department at TH Munich. A notable stint at NASA's George C. Marshall Spaceflight Center in the early '70s showcased his prowess, particularly in particle accelerator research.

By 1974, he had secured the title of Private Lecturer in Aerospace Engineering at TUM. His ingenuity in experimental plasma physics was pivotal in developing space flight experiments. It was during these years that he collaborated with the Tokyo Institute of Technology, resulting in the creation of the Munich Dust Counter, a pivotal tool for cosmic dust research.

But, beyond his expertise in space, Igenbergs was deeply influential in the realm of Systems Engineering (SE). His belief in SE was profound. He

viewed SE as "*the formalizable part of engineering art.*" By 1980, he introduced a foundational lecture on Systems Engineering, setting off what would be known as the "Munich School of SE." His desire was always clear: to leave an indelible mark in the field of SE. He saw the graduation of his first SE doctoral student in 1993 as a testament to this vision.

Igenbergs was not just an academic. He was a builder of communities. A defining moment for him and his SE team was their 1996 expedition to the NCOSE symposium in Boston, where connections, including those with MIT, were forged. In 1997, he was instrumental in founding the German Chapter of INCOSE. In 2000, his department played a crucial role in hosting the 1st European Systems Engineering Conference (EuSEC) in Munich, gathering over 200 participants globally. His contributions were recognized in 2006 when he received the INCOSE Fellows Award for his dedication to educating and mentoring future systems engineers.

Igenbergs' reputation in academia was paralleled by his commitment to his students. He nurtured and mentored his doctoral students with a blend of dedication and humor, providing not only academic guidance but also sage advice for navigating the challenges of professional life. His door was always open, both for academic queries and life's larger questions. His belief in the boundless power of dreams was encapsulated in his cherished mantra: "*Take away the dream from thoughts, and this cathedral wouldn't stand here.*"

Today, as we remember Prof. Dr. Eduard Igenbergs, we celebrate not just his monumental feats but the warmth, wit, and wisdom he generously shared. He leaves behind a legacy that time will honor and hearts will cherish. Rest in peace, dear Eduard.

Word by Armin Schulz

Ty Theriot Ends Rotation With INCOSE Foundation

For the past year, the INCOSE Foundation has been the beneficiary of a US Congress mandated rotation by DAU Engineering and Technology Department Chair, Tyrone Theriot.



The program was designed so that Defense Acquisition University (DAU) faculty would have the opportunity to gain relevant work experience by being embedded into the operations of a non-DAU organization. The INCOSE Foundation was invited to present to DAU, making the case for someone to join us just as we were solidifying Phase 1 of the SE Global Member Project. We were delighted when Ty expressed interest and joined our team.

As the year's rotation comes to a close, there are not enough words to express how wonderful an experience this has been for those of us lucky enough to work daily with Ty. The description for the rotation suggested that the faculty member would be splitting time between DAU and the host organization. If that is so, Ty worked about 48 hours a day.

Throughout the rotation, Ty worked with us to define and develop ways in which we could connect students and practitioners with INCOSE's network of members and its vast library of system engineering resources. He developed and managed the relationships with the first two Universities in the Global Member cohort - the University of Nairobi and the University of Lagos, worked closely with Courtney Wright to bring certification resources to the cohort and oversaw the generous donation from SE Scholar to bring certification training to them, and helped develop an INCOSE Foundation website. Those are just the highlights.

There might have been a raised eyebrow or two about the prospect of working with a "government

employee" who is also a retired Marine. Such thoughts were dispelled within the first weeks. Ty impressed us with his ability to see his way around an issue to find effective means to accomplish goals and in a way that was so down-to-earth we immediately felt comfortable. In addition to his leadership skills, Ty is clear thinking and funny, which can go a long way to easing the path to a solution. At the first opportunity, we invited Ty to join the INCOSE Foundation board and he accepted. We know we will have his fine mind paying attention to what we continue to do.

We have learned so much from him. We hope he will take back to DAU some useful lessons from us. We know we are sending him "home" with our respect and gratitude.

Holly Witte, Managing Director, The INCOSE Foundation

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Update by Dorothy Benveniste

The INCOSE Foundation, through the SE Global Member Project, is expanding access to the best practices of systems engineering to create a more equitable future - and help shape the future for students and practitioners in underserved regions of the globe.



We have made exciting progress to expand membership and INCOSE Knowledge Exam preparation to students at the University of Nairobi and University of Lagos. The Foundation is grateful to the INCOSE Certification Program for donating the cost of 20 knowledge exams, and to Paul

Martin of the SE Scholar Training program to allow 20 participants to take the Engineering Professional (SEP) Certification Exam Preparation Online Course at a reduced cost.

With the approval of the INCOSE Board and Executive Director, we will also underwrite

membership in the INCOSE Academic Council for the University of Lagos and the University of Nairobi.

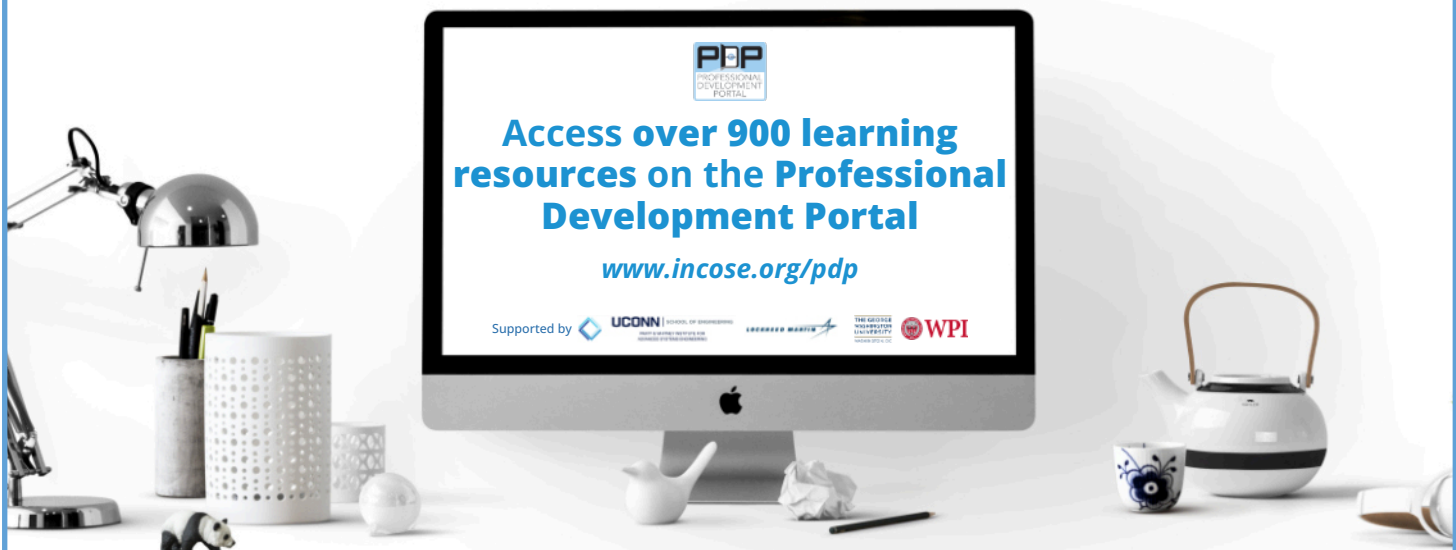
This allows us to strengthen the engineering programs at these universities and enrich students and faculties with systems engineering tools, processes, and certification assets, including the possibility of Academic Equivalency in the future.

We are grateful for the support we are receiving from INCOSE members to enable higher levels of technical achievement, student empowerment and academic equity in Africa. Please join your colleagues and [donate now!](#) Every donation counts and enables us to expand our reach.

By Dorothy Benveniste, Director, The INCOSE Foundation



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- Q1 2024 Newsletter: 15 Feb 2023
- Q2 2024 Newsletter: 15 May 2023
- Q3 2024 Newsletter: 15 August 2023

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Who are we? INCOSE is a 22,000+ 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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